Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE
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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

James J. Golden
Regional Director

November 7, 2019

Mr. Guy B. Dixon
President
Kyanite Mining Corporation
30 Willis Mt. Plant Lane
Dillwyn, VA 23936

Location: Buckingham County
Registration No.: 30677

Dear Mr. Dixon:

Attached is a renewal Title V permit to operate your facility pursuant to 9VAC5 Chapter 80 Article 1 of the Virginia Regulations for the Control and Abatement of Air Pollution. The attached permit will be in effect beginning November 7, 2019.

In the course of evaluating the application and arriving at a final decision to issue this permit, the Department of Environmental Quality (DEQ) deemed the application complete on July 29, 2019 and solicited written public comments by placing a newspaper advertisement in the Farmville Herald on September 20, 2019. The thirty-day required comment period, provided for in 9VAC5-80-270 expired on October 21, 2019.

This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and/or civil charges. Please read all permit conditions carefully.

This permit approval to operate shall not relieve Kyanite Mining Corporation of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. Please consult the relevant regulations for additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact the Piedmont Regional Office at (804) 527-5020.

Sincerely,

Kyle Ivar Winter, P.E.
Deputy Regional Director

JEK/JH/30677_028 TVR.docx

Attachments: Permit

cc: Director, Office of Permits and Air Toxics (3AP10), U.S. EPA, Region III
Director, OAPP
Inspector, Air Compliance

COMMONWEALTH of VIRGINIA

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Federal Operating Permit
Article 1

This permit is based upon the requirements of Title V of the Federal Clean Air Act and Chapter 80, Article 1 of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution. Until such time as this permit is reopened and revised, modified, revoked, terminated or expires, the permittee is authorized to operate in accordance with the terms and conditions contained herein. This permit is issued under the authority of Title 10.1, Chapter 13, §10.1-1322 of the Air Pollution Control Law of Virginia. This permit is issued consistent with the Administrative Process Act, and 9VAC5-80-50 through 9VAC5-80-300 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution of the Commonwealth of Virginia.

Authorization to operate a Stationary Source of Air Pollution as described in this permit is hereby granted to:

Permittee/Facility Name:	Kyanite Mining Corporation
Facility Location:	30 Willis Mt. Plant Lane Dillwyn, Virginia
Registration Number:	30677
Permit Number	PRO-30677

This permit includes the following programs: **Federally Enforceable Requirements - Clean Air Act (Pages 12 through 68)**

November 7, 2019	November 6, 2024
Effective Date	Expiration Date

Kyle Ivar Winter, P.E., Deputy Regional Director

November 7, 2019
Signature Date

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Facility Information

Permittee/Facility
Kyanite Mining Corporation
30 Willis Mt. Plant Lane
Dillwyn, Virginia 23936

Responsible Official
Guy B. Dixon
President

Contact Person
John Snoddy
Environmental Director
(434) 983-4316

County-Plant Identification Number: 51-029-00016

Facility Description: NAICS Code 212325 – Kyanite Mining Corporation (KMC) operates a kyanite mining and kyanite/mullite processing facility. KMC mines kyanite ore onsite, crushes the ore, concentrates the kyanite material using a wet extraction process and dries the concentrated kyanite eliminating the iron oxides through a thermal oxidization/reduction process. Some of the refined kyanite is calcined into mullite. One of the byproducts of the process is quartz. Some of the quartz is dried and is sold in bags or bulk. Kyanite production occurs at the East Ridge and Willis Mountain plants while production of mullite occurs at the Gieseke plant. All three plants are adjacent to one another and are considered a single stationary source.

Emission Units

Equipment to be operated consists of:

Fuel Burning Equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E5.1, E5.2	E5S	KMC ERD0314 fluid bed dryer, 2014, and an Allis Chalmers 10' x 100' rotary cooler, 1985	50 tons/hr, each and a 34 x 10^6 Btu/hr (heat input) burner	Croll-Reynolds Model CR-4-170-10R wet electrostatic precipitator (WESP) constructed in 2001	EWESP	PM, PM-10, SO_2, NOx, HF	July 25, 2019
W4.1, W4.2	W4S	4' x 60' rotary dryer and 5' x 60' rotary cooler , 1957	12 tons/hr and a 13.8 x 10^6 Btu/hr (heat input) burner	Croll-Reynolds Model CR-4-92-10R wet electrostatic precipitator (WESP) constructed in 2001	WWESP	PM, PM-10, SO_2, NOx, HF	July 25, 2019
G5	G5S	1 - L. F. Smith rotary kiln, construction in 1985, not completed	30 tons/hr and a 47.6 x 10^6 Btu/hr (heat input) burner	Wet electrostatic precipitator (WESP) or equivalent, not constructed	GWESP	PM, PM-10, SO_2, NOx, HF	July 25, 2019
W6	W6S	5' x 20' sand dryer, 1957	12 tons/hr and a 4.0 x 10^6 Btu/hr (heat input) burner	Kyanite Mining Co. Wet cyclone	WCYC	PM, PM-10	July 25, 2019
EG1	Main Office EG1	Perkins D60P3S diesel compression ignited, internal combustion engine (CI-ICE) powered emergency electric generator, 2004	80 HP (60kW)	none	none	none	N/A
EG2	Cell tower EG2	Generac LPG-fired spark ignited (SI) ICE powered emergency electric generator, 2004	15 HP (7 kW)	none	none	none	N/A

East Ridge Plant – Stone processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E1	fugitive	primary crusher truck dump hopper, 1978	350 tons/hr	None	none	PM, PM-10	July 25, 2019
E2	fugitive	50" x 60" Telsmith primary jaw crusher, 1978	350 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E3	fugitive	Telsmith SBS cone crusher, 2011	225 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E4.1	fugitive	Telsmith 44SBS cone crusher, 2012	192 tons/hr	Wet suppression	none	PM, PM-10	N/A
E4.2	fugitive	Telsmith 48FC tertiary crusher, 1978	70 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E2d	fugitive	1 - 5' x 15' Telsmith secondary screen, 1978	350 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E3e	fugitive	1 - 5' x 14' Deister tertiary screen, 2013	300 tons/hr	Wet suppression	none	PM, PM-10	N/A
E2a	fugitive	48" belt conveyor, 1978	350 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E2b, E2c	fugitive	2 - 42" belt conveyors, 1978	<350 tons/hr, each	Wet suppression	none	PM, PM-10	July 25, 2019
E3a, E3b	fugitive	30" belt conveyors, 1978	350 tons/hr, each	Wet suppression	none	PM, PM-10	July 25, 2019
E3c	fugitive	24" belt conveyors, 1978	300 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E3d	fugitive	24" belt conveyors, 1978	<150 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E4a	fugitive	24" belt conveyors, 1978	<150 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E4a.1	fugitive	24” belt conveyor, 2015	150 tons/hr	None	None	NA	July 25, 2019
E4b	fugitive	24" belt conveyors, 1978	<300 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E4c	fugitive	24" belt conveyors, 1978	<300 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019
E4d	fugitive	24" belt conveyors, 1978	<300 tons/hr	Wet suppression	none	PM, PM-10	July 25, 2019

Wet kyanite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E4f.1 & E4f.2	fugitive	2- Dominion Engineering Rod/Ball mills, 1985	75 tons/hr, each	Total enclosure, 1974	Flotation building	PM, PM-10	July 25, 2019
E4i	fugitive	Wet kyanite storage bin, 1978	<150 tons/hr	None	None	NA	July 25, 2019

East Ridge Plant - Dry kyanite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E5a	fugitive	24" belt, 1985	≤150 tons/hr	none	none	none	July 25, 2019
E5b, E5e, E5g	E5cS	3 - 16" bucket elevators, 1985	<50 tons/hr, each	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	July 25, 2019
E5c.1	-	Magnet Building Sweco screen, 1978	50 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	N/A
E5c	E5cS	1 - magnetic separation system, 1978	50 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	July 25, 2019
E5d, E5f	E5cS	2 - 24" belt conveyors, 1985	≤150 tons/hr, each	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	July 25, 2019
E5h	E5cS	High grade product air slide	2 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	September 29, 2016
E5i	E5cS	Reject material air slide	5 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	September 29, 2016
E6	E5cS	Magnet Building – 1 relocated enclosed bin with telescoping load-out chute, 1978	50 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	July 25, 2019
E6.1	E5cS	35-ton reject loadout bin	50 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	September 29, 2016
E6.2	E5cS	25-ton high grade product loadout bin and truck loadout system	25 tons/hr	Torit DFO-4-64-455 fabric filter, 2002	E5cBH	PM, PM-10	September 29, 2016
E6.3	fugitive	High grade product bag loading spout	15 tons/hr	none	none	none	September 29, 2016

East Ridge Plant- Miscellaneous equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E5h.1, E5h.2	fugitive	2 - 18" sawdust belt conveyors, 1974	5 tons/hr, each	Wet suppression	none	PM, PM-10	July 25, 2019

Gieseke Plant - NSPS Subpart OOO kyanite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
G2	fugitive	10.5' x 17' Allis Chalmers ball mill with a Sturdevant air classifier, 1986	30 tons/hr	Total enclosure	Upper Gieseke building	PM, PM-10	July 25, 2019
G2a.2	G2S	Upper Gieseke Building, Sturdevant air classifier, 2007	30 tons/hr	American Air Filter fabric filter	G2BH	PM	N/A
G7	G7S	9.5' x 17' Model BM-148 Nordberg ball mill, 1986	30 tons/hr	Donaldson DFR 3-24 cartridge filter	G7BH	PM, PM-10	July 25, 2019
G7c	fugitive	10' Whirlwind air classifier with integral screen, 1986	30 tons/hr	Total enclosure	Lower Gieseke building	PM, PM-10	July 25, 2019
G1b	fugitive	56,000-ton kyanite storage building, 1986	250 tons/hr	enclosure	none	PM, PM-10	July 25, 2019
G1a, G1c	fugitive	2 - 36" belt conveyors, 1986	<250 tons/hr, each	No transfer emission	none	none	July 25, 2019
G4a	fugitive	24" belt conveyor, 1986	<24 tons/hr	No transfer emission	none	none	July 25, 2019
G6g	fugitive	24" belt conveyor, 1986	30 tons/hr	No transfer emission	none	none	July 25, 2019
G2a	fugitive	16" bucket elevator, 1986	≤ 30 tons/hr	Total enclosure	Upper Gieseke building	PM, PM-10	July 25, 2019
G7a	fugitive	16" bucket elevator, 1986	≤ 30 tons/hr	Total enclosure	Lower Gieseke building	PM, PM-10	July 25, 2019
G6h	fugitive	16" bucket elevator, 1986	≤ 30 tons/hr	enclosure	none	PM, PM-10	July 25, 2019
G3a.1 thru G3a.3	G3S	3 - single spout bagging machines, 1986	≤ 10 tons/hr, each	Torit fabric filter	G3BH	PM, PM-10	July 25, 2019
G8b.1 & G8b.2	G8S1, G8S2	2 – double spout bagging machines, 1986	≤ 10 tons/hr, each	Torit fabric filter	G8B1, G8B2	PM, PM-10	July 25, 2019
G1d, G2b	fugitive	2 - 1,000-ton storage bins, 1986	≤ 30 tons/hr, each	Total enclosure	Upper Gieseke building	PM, PM-10	July 25, 2019

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
G8a	fugitive	4 - 1,000-ton storage bins, 1986	≤ 30 tons/hr, each	Total enclosure	Lower Gieseke building	PM, PM-10	July 25, 2019
G3b, G8c	fugitive	3 - bulk truck load-outs, 1986	≤ 25 tons/hr, each	Total enclosure	Upper Gieseke building	PM, PM-10	July 25, 2019
G6g.1, G6g.2	none	Mill Building bin and load-out spout, 1986	30 tons/hr, each	None	None	none	N/A
GAB1	none	Lower Gieseke Bagging System Shop-made includes hopper and air actuated bagging unit, 2011	5 tons/hr	Total enclosure	Building	PM, PM-10	July 25, 2019
GDHB1	fugitive	Gieseke Re-packaging Unit Shop-made includes dual hopper system, 2011	5 tons/hr	Total enclosure	Lower Gieseke building	PM, PM-10	July 25, 2019
GBMS3		Micronized product screw conveying system, 2014	0.52 tons/hr	None	None	NA	July 25, 2019
GBMS4		Micronized product bagging bin, 2014	6 tons/hr	None	None	NA	July 25, 2019
GBMS5		Micronized product bagging station, 2014	6 tons/hr	None	None	NA	July 25, 2019

Gieseke Plant – Bagging Equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
GB1	fugitive	1 – 1000 ft^3 Ball Mill Bin, 2006	48 tons/hr	Total enclosure	Upper Gieseke building	PM, PM-10	July 25, 2019
GB2	fugitive	1 – Kyanite Truck Dump, 2006	40 tons/hr		none	PM, PM-10	July 25, 2019
GB3	fugitive	1 – Kyanite Bucket Elevator, 2006	40 tons/hr	Total enclosure	enclosure	PM, PM-10	July 25, 2019
GB4	GBDC1	3 – 7500 ft^3 Kyanite Bins, 2006	48 tons/hr	Fabric filter	Bagging building	PM, PM-10	July 25, 2019

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
GB5	GBDC2	3 – 7500 ft^3 Kyanite Bins, 2006	48 tons/hr	Fabric filter	Bagging building	PM, PM-10	July 25, 2019
GB6	GBDC3	2 – 7500 ft^3 Kyanite Bins, 2006	40 tons/hr	Fabric filter	Bagging building	PM, PM-10	July 25, 2019
GB7	GBDC4	1 – Bulk Truck Bin, 2006	40 tons/hr	Fabric filter	Bagging building	PM, PM-10	July 25, 2019
GB8	GBDC4	1 – Bulk Truck Load-out, 2006	40 tons/hr	Fabric filter	Bagging building	PM, PM-10	July 25, 2019
GB9	fugitive	1 – 1000 ft^3 Bulk Bagging Bin, 2006	22 tons/hr	Total enclosure	Bagging building	PM, PM-10	July 25, 2019
GB10	fugitive	1 – Bulk Bagging Machine, 2006	22 tons/hr	Total enclosure	Bagging building	PM, PM-10	July 25, 2019
GB11	fugitive	1 – Air packing bin, 2006	1000 ft^3	Total enclosure	Bagging building	PM, PM-10	July 25, 2019
GB12	fugitive	1 – Air Packing Bagging Machine, 2006	15 tons/hr	Total enclosure	Bagging building	PM, PM-10	July 25, 2019
GB13	fugitive	1 – Impeller Packing Bin, 2006	1000 ft^3	Total enclosure	Bagging building	PM, PM-10	July 25, 2019
GB14	fugitive	1 – Impeller Packing Bagging Machine, 2006	15 tons/hr	Total enclosure	Bagging building	PM, PM-10	July 25, 2019
GBMS1	fugitive	Gieseke Micronizer Feeder and Micronizer Jet Pulverizer, 2014	0.52 TPH	Total enclosure	Bagging Building	PM, PM-10	July 25, 2019
GBMS2	fugitive	Gieseke Micronizer Bagger Sturtevant. 2011	0.52 TPH	Total enclosure	Bagging Building	PM, PM-10	July 25, 2019
GRBE1	fugitive	Floor sweepings bucket elevator, 2011	20 TPH	Total enclosure	Upper Gieseke Building	PM, PM-10	July 25, 2019

Gieseke Plant - Non-NSPS Subpart OOO finished kyanite/mullite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
G6b	fugitive	5' x 10' Allis Chalmers screen, 1986	20 tons/hr	Enclosure	none	PM, PM-10	July 25, 2019
G6a.1, G6a.2	fugitive	6' x 20' pan cooler, not operational, 1986	20 tons/hr, each	Enclosure	none	PM, PM-10	July 25, 2019
G6e	fugitive	24" belt conveyors, 1986	150 tons/hr	enclosure	none	PM, PM-10	July 25, 2019
G6c.1, G6c.2	fugitive	24" belt conveyors, 1986	150 tons/hr, each	none	none	PM, PM-10	July 25, 2019
G6	fugitive	7" bucket elevator, 1986	20 tons/hr	Enclosure	none	PM, PM-10	July 25, 2019
G6f	fugitive	73,000-ton storage building, 1986	20 tons/hr	Enclosure	none	PM, PM-10	July 25, 2019
G6c	fugitive	3 - mullite truck dump bins, 1986	20 tons/hr	none	none	none	July 25, 2019
G7b	fugitive	screw conveyor, 1986	30 tons/hr		none	PM, PM-10	July 25, 2019
G1, G6d	fugitive	kyanite truck dump bins, 1986	<250 tons/hr, each	none	none	none	July 25, 2019

Willis Mountain Plant – Non-NSPS Subpart OOO stone processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
W1	fugitive	truck dumping bin, 1957	200 tons/hr		none	PM, PM-10	July 25, 2019
W2	fugitive	3042 Birdsboro-Buchanan primary jaw crusher, 1957	200 tons/hr		none	PM, PM-10	July 25, 2019
W3	fugitive	Telsmith Model 489S gyratory crusher, 1957	200 tons/hr		none	PM, PM-10	July 25, 2019
W2a, W3a	fugitive	36" belt conveyors, 1957	200 tons/hr, each		none	PM, PM-10	July 25, 2019
W3b	fugitive	61' x 20' raw kyanite storage bin, 1957	200 tons/hr		none	PM, PM-10	July 25, 2019
W3c.1, W3c.2	fugitive	24" belt conveyors, 1957	200 ton/hr, each	Total enclosure	none	PM, PM-10	July 25, 2019
W3m	fugitive	Dry or wet kyanite/mullite truck dump hopper, 2014	50 tons/hr	None	None	NA	July 25, 2019

Willis Mountain Plant – kyanite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
W3d.1, W3d.2	fugitive	2- 5' x 10' Allis Chalmers ball mills, 1957	75 tons/hr, each	Total enclosure	Flotation Building	PM, PM-10	July 25, 2019
W3f.1 thru W3f.5	fugitive	5- 1,000-ton dry or wet kyanite storage bins, 1957	150 tons/hr	Total enclosure	none	PM, PM-10	July 25, 2019
W3n	fugitive	Dry or wet kyanite/mullite belt conveyor, 1979	50 tons/hr	Total enclosure	None	PM, PM-10	July 25, 2019
W3h	fugitive	Dry or wet kyanite bucket elevator, 1957	12 tons/hr	None	None	NA	July 25, 2019
W3i	fugitive	Dry or wet kyanite belt conveyor, 1957	150 tons/hr	None	None	NA	July 25, 2019
W3j	fugitive	24” belt conveyor, 1957	200 tons/hr	None	None	NA	July 25, 2019
W3j.1	fugitive	18” belt conveyor, 1957	100 tons/hr	None	None	NA	July 25, 2019

Willis Mountain Plant – dry kyanite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
W4d.1	Fugitive	Kyanite bagging building, Sweco screen, 2005	150 tons/hr	Total enclosure	none	PM, PM	July 25, 2019
W4h	DC1	bucket elevator, 2005	40 tons/hr	Fabric filter	DC1	PM, PM-10	July 25, 2019
W4i	DC1	10' x 25' kyanite storage bins, 2005	20 tons/hr	Fabric filter	DC1	PM, PM-10	July 25, 2019
W4L	DC1	10' x 25' kyanite storage bins, 2005	40 tons/hr	Fabric filter	DC1	PM, PM-10	July 25, 2019
W4j	DC1	9' x 25' kyanite storage bins, 2005	20 tons/hr	Fabric filter	DC1	PM, PM-10	July 25, 2019
W5b.1, W5b.2	fugitive	Kyanite bagging building, load-outs, 1957	100 tons/hr	Total enclosure	Kyanite Bagging Building	PM, PM-10	July 25, 2019
W5c	DC1	6' x 12' kyanite storage bins, 2005	20 tons/hr, each	Fabric filter	DC1	PM, PM-10	July 25, 2019

Willis Mountain Plant – Non-NSPS Subpart OOO dry kyanite processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
W4a.1	fugitive	24" belt conveyor, 1957	12 tons/hr	Total enclosure	Magnet Building	PM, PM-10	July 25, 2019
W4g1 & W4g2	DC1	Midwest International, 10ft. retractable with dust suction or equivalent, kyanite truck loadout, 2005	40 tons/hr, total for two spouts	Fabric filter	DC1	PM, PM-10	July 25, 2019
W4k	DC1	Midwest International, 10ft. retractable with dust suction or equivalent, ,kyanite truck loadout, 2005	20 tons/hr	Fabric filter	DC1	PM, PM-10	July 25, 2019
W4c.1 & W4c.2	fugitive	2-10' x 20' magnetite/mullite storage bins, 1957	<10 tons/hr, each	Enclosure	none	PM, PM-10	July 25, 2019
W5.1 thru W5.3	fugitive	3-single spout kyanite bagging machines, 1957	10 tons/hr, each	Total enclosure	Kyanite Bagging building	PM, PM-10	July 25, 2019
W8	fugitive	dry kyanite truck dump	150 tons/hr	None	None	PM, PM	July 25, 2019
W4a	fugitive	Magnetic separation system with screen, 1957	12 tons/hr	Total enclosure	Magnet Building	PM, PM-10	July 25, 2019
W4b, W4d, W4f	fugitive	3 - 18" belt conveyors, 1957	<150 tons/hr, each	Enclosure	None	PM, PM-10	July 25, 2019
W4e.7, W4e.8	fugitive	2 - 18" belt conveyors, 1957	<150 tons/hr, each	None	None	NA	July 25, 2019
W4a.2, W4a.3	fugitive	2 - 24" bucket elevators, 1957	12 tons/hr, each	Total enclosure	Magnet Building	PM, PM-10	July 25, 2019
W8a	fugitive	24' bucket elevator, 1957	150 tons/hr	Enclosure	None	PM, PM-10	July 25, 2019
W4e.2 thru W4e.6	fugitive	5-20' x 50' kyanite storage bins, 1957	<11.8 tons/hr, each	Total enclosure	Kyanite Bagging building	PM, PM-10	July 25, 2019
W5a.1, W5a.2	fugitive	2-10' x 20' kyanite storage bins, 1957	150 tons/hr, each	Total enclosure	Kyanite Bagging building	PM, PM-10	July 25, 2019
W4c.2a	fugitive	magnetite truck load-out, 1957	25 tons/hr	none	none	PM, PM-10	July 25, 2019

Willis Mountain Plant – Sand processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
W6a.1	fugitive	Sand Bagging Building-Sweco screen, 2005	12 tons/hr	Total Enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019
W6b.2	fugitive	32’ x 14’ dry sand storage bin, 2005, NSPS OOO	45 tons/hr	Total enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019
W7b.2	fugitive	enclosed truck load-out, 2005, NSPS OOOO	45 tons/hr	Total enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019

Willis Mountain Plant – Non-NSPS OOO sand processing equipment

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
W6a	fugitive	1 - 35' bucket elevator, 1957	12 tons/hr	Total enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019
W7	fugitive	1 - single spout bagging machine, 1957	12 tons/hr	Total enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019
W6b	fugitive	75-ton dry sand storage bin, 1957	25 tons/hr	Total enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019
W7b	fugitive	truck load-out, 1957	12 tons/hr	Total enclosure	Sand Bagging Building	PM, PM-10	July 25, 2019
W31.1, W31.2	Fugitive	2- 24” belt conveyors, 1957	100 tons/hr, each	Wet process			July 25, 2019
W3k	Fugitive	18” belt conveyor, 1957	100 tons/hr	Wet process			July 25, 2019

*The Size/Rated capacity, is provided for informational purposes only, and is not an applicable requirement.

Fuel Burning Equipment Requirements – East Ridge dryer/cooler (Ref. E5.1 and E5.2)

1. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** Filterable particulate matter (PM, PM-10) emissions from the East Ridge fluid bed dryer/cooler (Ref. E5.1 & E5.2) shall be controlled by a Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. EWESP) having a design control efficiency of not less than 99.9 percent. The WESP or equivalent control device shall be provided with adequate access for inspection and each control device shall be in operation when the dryer/cooler is in operation.
(9VAC5-80-110 and Condition 1 of 7/25/2019 permit)

2. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** Sulfur dioxide (SO2) and hydrogen fluoride (HF) emissions from the East Ridge fluid bed dryer/cooler (Ref. E5.1 & E5.2) shall be controlled by a Croll-Reynolds WESP or equivalent control device (Ref. EWESP) having a control efficiency of not less than 97.0 percent for SO_2. The WESP or equivalent control device shall be provided with adequate access for inspection and shall be in operation when the dryer/cooler is in operation.
(9VAC5-80-110 and Condition 2 of 7/25/2019 permit)

3. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** Carbon monoxide (CO) emissions from the East Ridge cooler (Ref. E5.2) shall be minimized by recirculation of the exhaust gas into the East Ridge dryer (Ref. E5.1) and shall be in operation when the cooler is in operation.
(9VAC5-80-110, and Condition 3 of 7/25/2019 permit)

4. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** The East Ridge dryer/cooler (Ref. E5.1 & E5.2) shall process no more than 170,600 tons of cooler output per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 32 of 7/25/2019 permit)

5. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** The approved fuels for the East Ridge dryer/cooler (Ref. E5.1 & E5.2) are distillate oil, residual oil, recycled oil, natural gas, LPG, and wood. A change in the fuel shall be considered a change in the method of operation of the East Ridge dryer/cooler (Ref. E5.1 & E5.2) and may require a new or amended permit. However, if a change in the fuel is not subject to new source review permitting requirements, this condition should not be construed to prohibit such a change.
(9VAC5-80-110 and Condition 42 of 7/25/2019 permit)

6. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** The East Ridge dryer/cooler (Ref. E5.1 & E5.2) shall consume no more than 2.56×10^{11} Btus per year of any combination of distillate oil, residual oil, recycled oil, natural gas, LPG, and wood, calculated monthly as the sum of each consecutive 12-month period. Compliance

for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 45 of 7/25/2019 permit)

7. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** Emissions from the operation of the East Ridge dryer/cooler (Ref. E5.1 & E5.2) shall not exceed the limits specified below:

Total Particulate Matter, including condensable matter	0.04 gr/dscf	9.7 tons/yr
Total PM-10, including condensable matter	0.04 gr/dscf	
Filterable Particulate Matter	0.02 gr/dscf	
Filterable PM-10	0.02 gr/dscf	
Sulfur Dioxide	60.0 lbs/hr	107.3 tons/yr
Nitrogen Oxides (as NO_2)	0.9 $lb/ton_{cooler\ output}$	
Carbon Monoxide	1.63 $lb/ton_{cooler\ output}$	
Volatile Organic Compounds	3.1 lb/hr	
Hydrogen Fluoride	0.0821 $lb/ton_{cooler\ output}$	

(9VAC5-80-110 and Condition 60 of 7/25/2019 permit)

8. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Limitations -** Visible emissions from the East Ridge WESP exhaust stack or equivalent control device (Ref. EWESP) shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9VAC5-80-110 and Condition 83 of 7/25/2019 permit)

9. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Monitoring** - The Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. EWESP) shall be equipped with a device to continuously measure the flow rate of the scrubber liquid recycle and fresh water make up, the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps), inlet and outlet temperature, or alternative monitoring methods as approved by the Piedmont Regional Office for the WESP. The WESP's secondary voltage (volts) and current (amps), flow rates of the scrubber liquid

recycle stream, fresh water make up stream(s), inlet and outlet temperatures, pH monitoring device(s), and alternative monitoring methods as approved by the Piedmont Regional Office shall be continuously recorded. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the WESP is operating.
(9VAC5-80-110 and Condition 24 of 7/25/2019 permit)

10. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Monitoring -** To ensure good performance of each WESP, the Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. EWESP) monitoring devices used to continuously measure the flow rates of the scrubber liquid recycle stream, inlet and outlet temperatures, and fresh water make up stream(s), and the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps) or alternative monitoring methods as approved by the Piedmont Regional Office for the WESP shall be observed by the permittee with a frequency of not less than once per shift (8-hour period). The permittee shall keep a log of the observations for the WESP.
(9VAC5-80-110 and Condition 27 of 7/25/2019 permit)

11. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Monitoring -** The permittee shall monitor the flow rates of the scrubber liquid recycle stream, and fresh water make up stream(s), and the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps), inlet and outlet temperatures, or alternative monitoring methods as approved by the Piedmont Regional Office for each Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. EWESP) during the performance tests to determine the optimum operating ranges necessary to demonstrate compliance to the pollutant control efficiency and emission rates. The permittee shall keep a log of the observations for each of the WESPs.
(9VAC5-80-110 and Condition 28 of 7/25/2019 permit)

12. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Monitoring - Compliance Assurance Monitoring (CAM)** - The permittee shall monitor, operate, calibrate and maintain the Croll-Reynolds (WESP) (Ref. EWESP) or equivalent control device controlling the East Ridge dryer/cooler (Ref. E5.1 & E5.2) in accordance with the attached CAM plan and the CAM requirements in Conditions 163 through 172.
(9VAC5-80-110 and 40CFR64.6(c))

13. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Recordkeeping -** The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

    a. Annual cooler output for the East Ridge dryer/cooler (Ref. E5.1 and E5.2), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total

for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

b. Annual fuel consumption in Btus per year for the East Ridge dryer/cooler (Ref. E5.1 and E5.2), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Operation and control device monitoring records for the WESP (Ref. EWESP).

d. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

e. Results of all stack tests, visual emissions examinations (VEE), and performance evaluations.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110 and Condition 87.b, c, u, v, and w of 7/25/2019 permit)

14. **Fuel Burning Equipment Requirements - (Ref. E5.1 & E5.2) – Testing** - At a frequency not to exceed five years, and upon request of the DEQ, the permittee shall conduct stack tests for PM, SO_2, NOx, CO, HF, and control efficiency of SO_2 from the East Ridge dryer/cooler's (Ref. E5.1 and E5.2) WESP or equivalent control device (Ref. EWESP) exhaust, using Reference Methods 5, 202, 6C, 7E, and 10B, respectively (reference 40CFR60, Appendix A and 40 CFR 51, Appendix M) or alternative test methods as approved by the Piedmont Regional Office, to determine compliance with the emission limits and control efficiency requirements contained in Conditions 2 and 7. Concurrently with the PM stack test, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the East Ridge dryer/cooler's (Ref. E5.1 and E5.2) WESP (Ref. EWESP) exhaust. Each test shall consist of ten sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. Should conditions prevent concurrent opacity observations, the Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. The tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30. The details of the tests shall be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. Two copies of the test results shall be submitted to the Piedmont Regional Office within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110)

Fuel Burning Equipment Requirements – Gieseke kiln (Ref. G5)

15. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** Filterable particulate matter (PM, PM-10) emissions from the Gieseke kiln (Ref. G5) shall be controlled by a

Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. GWESP) having a design control efficiency of not less than 99.9 percent. The WESP or equivalent control device shall be provided with adequate access for inspection and each control device shall be in operation when the kiln is in operation.
(9VAC5-80-110 and Condition 1 of 7/25/2019 permit)

16. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** Sulfur dioxide (SO_2) and hydrogen fluoride (HF) emissions from the Gieseke kiln (Ref. G5) shall be controlled by a Croll-Reynolds WESP or equivalent control device (Ref. GWESP) having a control efficiency of not less than 97.0 percent for SO_2. The WESP or equivalent control device shall be provided with adequate access for inspection and shall be in operation when the when the kiln is in operation.
(9VAC5-80-110 and Condition 2 of 7/25/2019 permit)

17. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** The Gieseke kiln (Ref. G5) shall process no more than 65,000 tons of kiln output per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 33 of 7/25/2019 permit)

18. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** The approved fuels for the Gieseke kiln (Ref. G5) are coal, distillate oil, and residual oil. A change in the fuel shall be considered a change in the method of operation of the Gieseke kiln (Ref. G5) and may require a new or amended permit. However, if a change in the fuel is not subject to new source review permitting requirements, this condition should not be construed to prohibit such a change.
(9VAC5-80-110 and Condition 43 of 7/25/2019 permit)

19. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** The Gieseke kiln (Ref. G5) shall consume no more than a total of 2.71×10^{11} Btus per year of any combination of distillate oil, residual oil, and coal, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 46 of 7/25/2019 permit)

20. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** Emissions from the operation of the Gieseke kiln (Ref. G5) shall not exceed the limits specified below:

Total Particulate Matter, including condensable matter	0.02 gr/dscf
Total PM-10, including condensable matter	0.02 gr/dscf
Sulfur Dioxide	6.6 lbs/hr

Nitrogen Oxides (as NO_2)	60.0 lbs/hr
Carbon Monoxide	17.7 lbs/hr
Hydrogen Fluoride	0.0021 $lb/ton_{kiln\ output}$

(9VAC5-80-110 and Condition 61 of 7/25/2019 permit)

21. **Fuel Burning Equipment Requirements - (Ref. G5) – Limitations -** Visible emissions from the Gieseke WESP exhaust stack (Ref. GWESP), or equivalent control device shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.
(9VAC5-80-110 and Condition 83 of 7/25/2019 permit)

22. **Fuel Burning Equipment Requirements - (Ref. G5) – Monitoring** - The WESP or equivalent control device (Ref. GWESP) shall be equipped with a device to continuously measure the flow rate of the scrubber liquid recycle and fresh water make up, the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps), inlet and outlet temperature, or alternative monitoring methods as approved by the Piedmont Regional Office for the WESP. The WESP's secondary voltage (volts) and current (amps), flow rates of the scrubber liquid recycle stream, fresh water make up stream(s), inlet and outlet temperatures, pH monitoring device(s), and alternative monitoring methods as approved by the Piedmont Regional Office shall be continuously recorded. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the WESP is operating.
(9VAC5-80-110 and Condition 24 of 7/25/2019 permit)

23. **Fuel Burning Equipment Requirements - (Ref. G5) – Monitoring** - To ensure good performance of each WESP, the Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. GWESP monitoring devices used to continuously measure the flow rates of the scrubber liquid recycle stream, inlet and outlet temperatures, and fresh water make up stream(s), and the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps) or alternative monitoring methods as approved by the Piedmont Regional Office for the WESP shall be observed by the permittee with a frequency of not less than once per shift (8-hour period). The permittee shall keep a log of the observations for the WESP.
(9VAC5-80-110 and Condition 27 of 7/25/2019 permit)

24. **Fuel Burning Equipment Requirements - (Ref. G5) – Monitoring** - The permittee shall monitor the flow rates of the scrubber liquid recycle stream, and fresh water make up stream(s), and the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps), inlet and outlet temperatures, or alternative monitoring methods as approved by the Piedmont Regional Office for each WESP or equivalent control device

(Ref. GWESP) during the performance tests to determine the optimum operating ranges necessary to demonstrate compliance to the pollutant control efficiency and emission rates. The permittee shall keep a log of the observations for each of the WESPs.
(9VAC5-80-110 and Condition 28 of 7/25/2019 permit)

25. **Fuel Burning Equipment Requirements - (Ref. G5) – CAM** - Prior to commencement of operation of the Gieseke kiln (Ref. G5) the permittee shall submit a CAM Plan to the Piedmont Regional Office for approval. The permittee shall monitor, operate, calibrate and maintain the Croll-Reynolds (WESP) (Ref. GWESP) or equivalent control device controlling the Gieseke kiln (Ref. G5) in accordance with the approved CAM plan and the CAM requirements in Conditions 163 through 172.
(9VAC5-80-110 and 40CFR64.6(c))

26. **Fuel Burning Equipment Requirements - (Ref. G5) – Recordkeeping -** The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

    a. Annual kiln output for the Gieseke kiln (Ref. G5), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    b. Annual fuel consumption in Btus per year, in the Gieseke kiln (Ref. G5), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    c. Operation and control device monitoring records for the WESP or equivalent control device (Ref. GWESP).

    d. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

    e. Results of all stack tests, visual emissions examinations (VEE), and performance evaluations.

    These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
    (9VAC5-80-110 and Condition 87.d, g, u, v, and w of 7/25/2019 permit)

27. **Fuel Burning Equipment Requirements - (Ref. G5) – Testing -** Initial performance tests shall be conducted for PM, SO_2, NOx, and CO from the Gieseke WESP or equivalent control device (Ref. GWESP) exhaust, using Reference Methods 5, 202, 6C, 7E, and 10B,

respectively (reference 40CFR60, Appendix A and 40 CFR 51, Appendix M) or alternative test methods as approved by the Piedmont Regional Office, to determine compliance with the emission limits and control efficiency requirements contained in Conditions 16 and 20; and to determine predictive emissions monitoring data as required in Condition 24. The tests shall be performed, within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30, and the test methods and procedures contained in each applicable section or subpart listed in 40CFR60, Appendix A. The details of the tests are to be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. Two copies of the test results shall be submitted to the Piedmont Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110 and Condition 88 of 7/25/2019 permit)

28. **Fuel Burning Equipment Requirements - (Ref. G5) – Testing -** Concurrently with the performance tests as required in Condition 27, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the Gieseke WESP or equivalent control device (Ref. GWESP) exhaust. Each test shall consist of ten sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests are to be arranged with the Piedmont Regional Office. Should conditions prevent concurrent opacity observations, the Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the Piedmont Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110 and Condition 89 of 7/25/2019 permit)

29. **Fuel Burning Equipment Requirements - (Ref. G5) – Testing -** After the initial performance test, at a frequency not to exceed five years, the permittee shall conduct stack tests for PM, SO_2, NOx, CO, HF, and control efficiency of SO_2 from the Gieseke kiln (Ref. G5) WESP or equivalent control device (Ref. GWESP) exhaust, using Reference Methods 5, 202, 6C, 7E, and 10B, respectively (reference 40CFR60, Appendix A and 40 CFR 51, Appendix M) or alternative test methods as approved by the Piedmont Regional Office, to determine compliance with the emission limits and control efficiency requirements contained in Conditions 16 and 20. Concurrently with the PM stack test, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the Gieseke kiln (Ref. G5) WESP or equivalent control device (Ref. GWESP) exhaust. Each test shall consist of ten sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. Should conditions prevent concurrent opacity observations, the Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. The tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30. The details of the tests shall be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. Two copies of the

test results shall be submitted to the Piedmont Regional Office within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110)

30. **Fuel Burning Equipment Requirements - (Ref. G5) – Reporting** - The permittee shall submit a written statement including all pertinent stack parameters sufficient for computer modeling or submit approved computer modeling for the proposed Gieseke WESP (Ref. GWESP) or equivalent control device to the Piedmont Regional Office prior to commencement of construction of the control device.
(9VAC5-80-110 and Condition 55 of 7/25/2019 permit)

31. **Fuel Burning Equipment Requirements - (Ref. G5) – Reporting -** Not later than 90 days after the completion of the initial performance tests from the Gieseke WESP or equivalent control device (Ref. GWESP) required in Condition 27, the permittee shall submit to DEQ the proposed revised emission factors and the related revised throughput limits, fuel consumption, and emission limits such that this facility does not exceed 249 tons/yr of any single regulated air pollutant. DEQ will consider the proposed revisions and, after negotiations with the permittee, may amend this current permit as negotiated. Any requests for increases to the emissions limits listed above will be subject to appropriate permitting review.
(9VAC5-80-110 and Condition 90 of 7/25/2019 permit)

Fuel Burning Equipment Requirements –Willis Mountain dryer/cooler (Ref. W4.1 and W4.2)

32. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** Filterable particulate matter (PM, PM-10) emissions from the Willis Mountain dryer/cooler (Ref. W4.1 and W4.2) shall be controlled by a Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. WWESP) having a design control efficiency of not less than 99.9 percent. The WESP shall be provided with adequate access for inspection and each control device shall be in operation when the dryer/cooler is in operation.
(9VAC5-80-110 and Condition 1 of 7/25/2019 permit)

33. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** Sulfur dioxide (SO_2) and hydrogen fluoride (HF) emissions from the Willis Mountain dryer/cooler (Ref. W4.1 and W4.2) shall be controlled by a WESP (Ref. WWESP) having a control efficiency of not less than 97.0 percent for SO_2. The WESP shall be provided with adequate access for inspection and shall be in operation when the when the dryer/cooler is in operation.
(9VAC5-80-110 and Condition 2 of 7/25/2019 permit)

34. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** Carbon monoxide (CO) emissions from the Willis Mountain cooler (Ref. W4.2) shall be minimized

by recirculation of the exhaust into the Willis Mountain dryer (Ref. W4.1) and shall be in operation when the cooler is in operation.
(9VAC5-80-110 and Condition 4 of 7/25/2019 permit)

35. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** The Willis Mountain dryer/cooler (Ref. W4.1 and 4.2) shall process no more than 55,000 tons of cooler output per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 35 of 2019 permit)

36. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** The approved fuels for the Willis Mountain dryer/cooler (Ref. W4.1 and W4.2) are distillate oil, residual oil, recycled oil, natural gas, and LPG. A change in the fuel shall be considered a change in the method of operation of the Willis Mountain dryer/cooler (Ref. W4.1 & W4.2) and may require a new or amended permit. However, if a change in the fuel is not subject to new source review permitting requirements, this condition should not be construed to prohibit such a change.
(9VAC5-80-110 and Condition 44 of 7/25/2019 permit)

37. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** The Willis Mountain dryer/cooler (Ref. W4.1 and W4.2) shall consume no more than 9.82 x 10^{10} Btus per year of any combination of distillate oil, residual oil, recycled oil, natural gas, and LPG, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 47 of 7/25/2019 permit)

38. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** Emissions from the operation of the Willis Mountain dryer/cooler (Ref. W4.1 and W4.2) shall not exceed the limits specified below:

Total Particulate Matter, including condensible matter	0.02 gr/dscf
Total PM-10, including condensible matter	0.02 gr/dscf
Sulfur Dioxide	14.76 lbs/hr
Nitrogen Oxides (as NO_2)	9.00 lbs/hr
Carbon Monoxide	27.52 lbs/hr

Hydrogen Fluoride 0.0821 lb/ton $_{\text{cooler output}}$
(9VAC5-80-110 and Condition 62 of 7/25/2019 permit)

39. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Limitations -** Visible emissions from the Willis Mountain WESP exhaust stack (Ref. WWESP), or equivalent control device shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.
(9VAC5-80-110 and Condition 83 of 7/25/2019 permit)

40. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Monitoring -** The WESP or equivalent control device (Ref. WWESP) shall be equipped with a device to continuously measure the flow rate of the scrubber liquid recycle and fresh water make up, the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps), inlet and outlet temperature, or alternative monitoring methods as approved by the Piedmont Regional Office for the WESP. The WESP's secondary voltage (volts) and current (amps), flow rates of the scrubber liquid recycle stream, fresh water make up stream(s), inlet and outlet temperatures, pH monitoring device(s), and alternative monitoring methods as approved by the Piedmont Regional Office shall be continuously recorded. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the WESP is operating.
(9VAC5-80-110 and Condition 24 of 7/25/2019 permit)

41. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Monitoring -** To ensure good performance of each WESP, the Croll-Reynolds wet electrostatic precipitator (WESP) or equivalent control device (Ref. WWESP) monitoring devices used to continuously measure the flow rates of the scrubber liquid recycle stream, inlet and outlet temperatures, and fresh water make up stream(s), and the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps) or alternative monitoring methods as approved by the Piedmont Regional Office for the WESP shall be observed by the permittee with a frequency of not less than once per shift (8-hour period). The permittee shall keep a log of the observations for the WESP.
(9VAC5-80-110 and Condition 27 of 7/25/2019 permit)

42. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Monitoring -** The permittee shall monitor the flow rates of the scrubber liquid recycle stream, and fresh water make up stream(s), and the pH of the scrubbing solution recycle stream, the secondary voltage (volts) and current (amps), inlet and outlet temperatures, or alternative monitoring methods as approved by the Piedmont Regional Office for each WESP or equivalent control device (Ref. WWESP) during the performance tests to determine the optimum operating ranges necessary to demonstrate compliance to the pollutant control efficiency and emission rates. The permittee shall keep a log of the observations for each of the WESPs.
(9VAC5-80-110 and Condition 28 of 7/25/2019 permit)

43. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – CAM** - The permittee shall monitor, operate, calibrate and maintain the Croll-Reynolds (WESP) (Ref. EWESP) or equivalent control device controlling Willis Mountain dryer/cooler (Ref. W4.1 and W4.2) in accordance with the attached CAM plan and the CAM requirements in Conditions 163 through 172.
(9VAC5-80-110 E and 40CFR64.6(c))

44. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Recordkeeping** The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

    a. Annual cooler output for the Willis Mountain dryer/cooler's (Ref. W4.1 and W 4.2), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    b. Annual fuel consumption in Btus per year for the Willis Mountain dryer/cooler (Ref. W4.1 and W 4.2), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    c. Operation and control device monitoring records for the WESP (Ref. WWESP).

    d. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

    e. Results of all stack tests, visual emissions examinations (VEE), and performance evaluations.

    These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
    (9VAC5-80-110, 40 CFR 64.9(b) and Condition 87. j, o, u, v, and w of 7/25/2019 permit)

45. **Fuel Burning Equipment Requirements - (Ref. W4.1 and W4.2) – Testing -** At a frequency not to exceed five years, and at the request of the DEQ, the permittee shall conduct stack tests for PM, SO2, NOx, CO, HF and control efficiency of SO_2 from the Willis Mountain WESP (Ref. WWESP) exhaust, using Reference Methods 5, 202, 6C, 7E, and 10B, respectively (reference 40CFR60, Appendix A and 40 CFR 51, Appendix M) or alternative test methods as approved by the Piedmont Regional Office, to determine compliance with the emission limits and control efficiency requirements contained in Conditions 33 and 38. Concurrently with the PM stack test, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the Willis Mountain WESP (Ref. WWESP) exhaust. Each test shall

consist of ten sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. Should conditions prevent concurrent opacity observations, the Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. The tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30. The details of the tests shall be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. Two copies of the test results shall be submitted to the Piedmont Regional Office within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110)

Fuel Burning Equipment Requirements – Willis Mountain sand dryer (Ref. W6)

46. **Fuel Burning Equipment Requirements - (Ref. W6) – Limitations** - Particulate matter (PM) and PM-10 emissions from the Willis Mountain sand dryer (Ref. W6) shall be controlled by a wet cyclone (Ref. WCYC) having a design control efficiency of 85.0 percent and 60.0 percent, respectively. The wet cyclone shall be provided with adequate access for inspection and each control device shall be in operation when the sand dryer is in operation.
(9VAC5-80-110 and Condition 6 of 7/25/2019 permit)

47. **Fuel Burning Equipment Requirements - (Ref. W6) – Limitations -** The Willis Mountain sand dryer (Ref. W6) shall process no more than 25,000 tons of sand per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 36 of 7/25/2019 permit)

48. **Fuel Burning Equipment Requirements - (Ref. W6) – Limitations -** The approved fuels for the Willis Mountain sand dryer (Ref. W6) are distillate oil, residual oil, and recycled oil, natural gas, and LPG. A change in the fuel shall be considered a change in the method of operation of the sand dryer (Ref. W6) and may require a new or amended permit. However, if a change in the fuel is not subject to new source review permitting requirements, this condition should not be construed to prohibit such a change.
(9VAC5-80-110 and Condition 44 of 7/25/2019 permit)

49. **Fuel Burning Equipment Requirements - (Ref. W6) – Limitations -** The Willis Mountain sand dryer (Ref. W6) shall consume no more than 120,000 gallons of approved liquid fuels or natural gas/LPG Btu equivalent, consisting of no more than 115,000 gallons of either residual oil or recycled oil per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 48 of 7/25/2019 permit)

50. **Fuel Burning Equipment Requirements - (Ref. W6) – Limitations -** Emissions from the operation of the Willis Mountain sand dryer (Ref. W6) shall not exceed the limits specified below:

Particulate Matter, including condensable matter	3.60 lbs/hr
PM-10, including condensable matter	0.96 lbs/hr
Sulfur Dioxide	10.47 lbs/hr
Nitrogen Oxides (as NO_2)	0.37 lbs/hr
Carbon Monoxide	4.8 lbs/hr

(9VAC5-80-110 and Condition 63 of 7/25/2019 permit)

51. **Fuel Burning Equipment Requirements - (Ref. W6) – Limitations -** Visible emissions from the Willis Mountain sand dryer wet cyclone (Ref. WCYC) exhaust stack shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 84 of 7/25/2019 permit)

52. **Fuel Burning Equipment Requirements - (Ref. W6) – Monitoring** -The Willis Mountain sand dryer's wet cyclone (Ref. WCYC) shall be equipped with a device to continuously measure the differential pressure drop across the wet cyclone. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the wet cyclone is operating. The permittee shall establish a normal operating range for the differential pressure drop across the wet cyclone, based on the manufacturer’s recommendations or developed from observations recorded from the monitoring devices during normal operation. The permittee shall maintain written documentation of this range.
(9VAC5-80-110 and Condition 26 of 7/25/2019 permit)

53. **Fuel Burning Equipment Requirements – (Ref. W6) – Monitoring –** To ensure good performance, the wet cyclone monitoring device used to continuously measure differential pressure drop shall be observed by the permittee with a frequency of not less than once per week when the Willis Mountain sand dryer is in operation. In the event that the differential pressure is operating outside of the normal operating range, the permittee shall take necessary corrective actions such that the wet cyclone resumes proper operation. The permittee shall keep a log of observations from the wet cyclone monitoring device. The log shall include the date and time of the observations, whether or not the differential pressure

drop was operating with the normal operating range and any necessary corrective actions taken.
(9VAC5-80-110)

54. **Fuel Burning Equipment Requirements - (Ref. W6) – Monitoring -** At minimum frequency of once per week, when the sand dryer (Ref. W6) is operating, an observation of the presence of visible emissions from the WCYC stack shall be made. The presence of visible emissions shall require the permittee to:

    a. Take timely corrective action such that the WCYC, with visible emissions, resumes operation with no visible emissions, or,

    b. Conduct a visible emission evaluation (VEE) on the WCYC stack, with visible emissions, in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the WCYC stack are 20 percent opacity or less. If any of the observations exceed the opacity limitation of 20 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the WCYC resumes operation within the 20 percent opacity limit.

    c. If visible emissions observations conducted during twelve consecutive weeks show no visible emissions for a particular stack, the permittee may reduce the monitoring frequency to once per month for that stack. Anytime the monthly visible emissions observations show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to weekly for the stack.

    (9VAC5-80-110)

55. **Fuel Burning Equipment Requirements - (Ref. W6) – Recordkeeping** - The permittee shall maintain a WCYC stack observation log to demonstrate compliance. The logs shall include the date and time of the observations, whether or not there were visible emissions, the results of all VEEs, any necessary corrective action, and the name of the observer. If the Willis Mountain sand dryer (Ref. W7) has not been operated for any period during the week it shall be noted in the log book that the unit was not operating, and an observation was not required.
    (9VAC5-80-110)

56. **Fuel Burning Equipment Requirements - (Ref. W6) – Recordkeeping -** The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

    a. Annual production of sand for the Willis Mountain sand dryer (Ref. W6), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

b. Annual consumption of distillate oil, residual oil, and recycled oil, in gallons, in the Willis Mountain sand dryer (Ref. W6), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

d. Results of all stack tests, visual emissions examinations (VEE), and performance evaluations.

e. All emission factors, equipment rated capacities and emission equations used to show compliance with the emission limitations listed in condition 50.

f. Results of the weekly monitoring device observations associated with the Willis Mountain sand dryer, details of any corrective actions taken as a result and differential drop normal operating range records.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110, 9VAC5-50-50 and Condition 87.k, p, v, and w of 7/25/2019 permit)

57. **Fuel Burning Equipment Requirements - (Ref. W6) – Testing -** At a frequency not to exceed five years, and at the request of the DEQ, the permittee shall conduct a stack test for PM from the Willis Mountain wet cyclone (Ref. WCYC) exhaust, using Reference Methods 5 and 202 (reference 40CFR60, Appendix A and 40 CFR 51, Appendix M) or alternative test methods as approved by the Piedmont Regional Office, to determine compliance with the emission limits contained in Condition 46. Concurrently with the stack test, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the Willis Mountain wet cyclone (Ref. WCYC) exhaust. Each test shall consist of ten sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. Should conditions prevent concurrent opacity observations, the Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. The tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30. The details of the tests shall be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. Two copies of the test results shall be submitted to the Piedmont Regional Office within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110)

Fuel Burning Equipment Requirements - Emergency Electric Engines (Ref. EG1, EG2)

58. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The emergency engines (EG1, EG2) shall) shall not be operated other than for emergency operation as specified in 40 CFR 63.6640(f)(1), maintenance and testing as specified in 40 CFR63.6640(f)(2)(i), and operation in non-emergency situations for more than 50 hours per year as specified in 40 CFR 63.6640(f)(4), or they will not be considered an emergency engine and must meet the requirements for non-emergency engines.
(9VAC5-80-110 and 40CFR63.6640(f))

59. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The emergency engine EG1, shall comply with the requirements of Table 2d(4) and the emergency engine EG2, shall comply with the requirements of Table 2d(5) of 40CFR63 Subpart ZZZZ. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.
(9VAC 5-80-110, 40CFR63.6603(a), 40CFR63.6650, Table 2d(4) and Table 2d(5) of 40CFR63 Subpart ZZZZ)

60. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The permittee must operate and maintain the emergency engines (EG1, EG2) and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
(9VAC 5-80-110 and 40CFR63.6625(e)(3))

61. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
(9VAC5-80-110 and 40CFR63.6625(h))

62. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Table 2d to Subpart ZZZZ. The analysis program shall be carried

out as specified in 40CFR63.6625(i) & (j) for emergency engine EG1 and EG2 respectively. The analysis program must be part of the maintenance plan for the engine. (9VAC5-80-110 and 40CFR63.6625(i)&(j))

63. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The permittee must in compliance with the emission limitations and operating limitations in Subpart ZZZZ that apply at all times. At all times the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (9VAC5-80-110, 40CFR63.6605(a)&(b) and 40 CFR 63 Subparts A and ZZZZ)

64. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Limitations -** The permittee must demonstrate continuous compliance with each emission limitation and operating limitation that apply according to methods specified in Table 6 of Subpart ZZZZ. (9VAC5-80-110, 40CFR63.6640(a))

65. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Monitoring -** Each emergency engine (EG1, EG2) shall be equipped with a non-resettable hour meter. (9VAC5-80-110, 40CFR63.6625(f))

66. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Recordkeeping -** When complying with emission and operating limitations, the permittee must keep the following records:
    a. A copy of each notification and report submitted to comply with Subpart ZZZZ, including change in information already provided notifications, according to the requirements in §63.10(b)(2)(xiv) and 63.9(j).

    b. Records of the occurrence and duration of each malfunction of each emergency engine (EG1, EG2) or any air pollution control and monitoring equipment.

    c. Records of all required maintenance performed on the air pollution control and monitoring equipment.

    d. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore the malfunctioning engine and air pollution control and monitoring equipment to its normal or usual manner of operation.

    (9VAC5-80-110 and 40CFR63.6655(a))

67. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Recordkeeping -** The permittee must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies.
(9VAC5-80-110 and 40CFR63.6655(d))

68. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Recordkeeping -** The permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan or according to the manufacture's emission-related operation and maintenance instructions, for an existing stationary RICE subject to management practices in Table 2d of Subpart ZZZZ.
(9VAC5-80-110, Table 6 of Subpart ZZZZ and 40CFR63.6655(e))

69. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Recordkeeping -** The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in §63.6640(f)(4)(ii), the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.
(9VAC5-80-110 and 40CFR63.6655(f))

70. **Fuel Burning Equipment Requirements – (Ref. EG1 and EG2) – Recordkeeping -** Records kept shall be available on site for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110)

Process Equipment Requirements - Raw and Finished Kyanite/Mullite Processing

(Ref. East Ridge Plant)

71. **Process Equipment Requirements - Limitations** - Particulate emissions from the East Ridge rod mills (Ref. E4f.1, E4f.2) shall be controlled by totally enclosing the emission units with a building having four walls and a roof.
(9VAC5-80-110 and Condition 14 of 7/25/2019 permit)

72. **Process Equipment Requirements - Limitations -** Particulate emissions from the East Ridge Magnet building containing the following emission units: 16" bucket elevators (Ref. E5b, E5e, E5g), 24" belt conveyors (Ref. E5d, E5f), magnetic separation (Ref. E5c), screen (Ref. E5c.1), and storage bins and load-outs (Ref. E6, E6.1) shall be controlled by a fabric filter (Ref. E5cBH). The fabric filter shall be provided with adequate access for inspection and shall be in operation when the 16" bucket elevators (Ref. E5b, E5e, E5g), 24" belt conveyors (Ref. E5d, E5f), magnetic separation (Ref. E5c), screen (Ref. E5c.1), and storage bins and load-outs (Ref. E6, E6.1) are operating.
(9VAC5-80-110 and Condition 15 of 7/25/2019 permit)

73. **Process Equipment Requirements - Limitations -** Particulate emissions from the kyanite processing equipment reject material air slide (Ref. E5i), 35 ton reject loadout bin (Ref. E6.1), high grade product air slide (Ref. E5h) and 25-ton high grade product loadout bin and truck loadout system (Ref. E6.2) shall be controlled by a fabric filter (Ref. E5cBH). The fabric filter shall be provided with adequate access for inspection and shall be in operation when any of the above listed equipment is operating.
(9VAC5-80-110 and Condition 1 of 9/29/2016 permit)

74. **Process Equipment Requirements - Limitations -** Fugitive emission controls shall include the following, or equivalent, as a minimum:

    a. Particulate matter emissions from kyanite and mullite processing equipment not covered by Conditions 1, 71 and 72 shall be controlled by wet suppression or equivalent (as approved by the DEQ).

    b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; paving of roadways, and maintenance of roadways in a clean condition.

    c. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Dirt, product, or raw material spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.

    (9VAC5-80-110 and Condition 23 of 7/25/2019 permit)

75. **Process Equipment Requirements - Limitations -** The throughput of raw ore through the East Ridge stone processing facility shall not exceed 1,500,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 30 of 7/25/2019 permit)

76. **Process Equipment Requirements - Limitations -** The throughput through the high grade kyanite processing equipment high grade product air slide (Ref. E5h), 25-ton high grade product loadout bin and truck loadout system (Ref.E6.2) and high grade product bag loading spout (Ref. E6.3) shall not exceed 10,100 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 Condition 3 of 9/29/2016 permit)

77. **Process Equipment Requirements - Limitations -** Particulate emissions from the operation of the East Ridge kyanite processing facility, except East Ridge dryer/cooler (Ref. E5.1 & E5.2) shall not exceed the limits specified below:

Particulate Matter	35.4 tons/yr

PM-10 18.9 tons/yr

Annual emissions are calculated as the sum of each consecutive twelve month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition 75.
(9VAC5-80-110 and Condition 57 of 7/25/2019 permit)

78. **Process Equipment Requirements - Limitations -** Particulate emissions from the fabric filter (Ref. E5cBH) exhaust stack shall not exceed 0.014 gr/dscf as determined by EPA Method 5 or 17 (reference 40 CFR 60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 5 of 9/29/2016 permit)

79. **Process Equipment Requirements - Limitations -** Visible emissions from the East Ridge primary and secondary crushing (Ref. E2, E3) shall not exceed 15 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 67 of 7/25/2019 permit)

80. **Process Equipment Requirements - Limitations -** Visible emissions from the East Ridge tertiary crushing (Ref. E4.2), screens (Ref. E2d, E3e), stockpiles, storage bin (E4i), belt conveyors (Ref. E2a, E2b, E2c, E3a, E3b, E3c, E3d, E4a, E4a.1, E4b, E4c, E5a, and E4d) shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 68 of 7/25/2019 permit)

81. **Process Equipment Requirements - Limitations -** Visible emissions from the East Ridge Flotation building (enclosure), containing rod mills (Ref. E4f.1, E4f.2), shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 69 of 7/25/2019 permit)

82. **Process Equipment Requirements - Limitations -** Visible emissions from the East Ridge Magnet building fabric filter (Ref. E5cBH), which the following processing equipment are located, bucket elevators (Ref. E5b, E5e, E5g), belt conveyors (Ref. E5d, E5f), magnetic separation (ref. E5c), screen (Ref. E5c.1), and storage bins and truck load-outs (Refs. E6, E6.1) shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 70 of 7/25/2019 permit)

83. **Process Equipment Requirements - Limitations -** Visible emissions from the East Ridge saw dust belt conveyors (Ref. E5h.1, E5h.2) and concrete batch plant (Ref. E7) shall not exceed 20 percent opacity except during one six-minute period in any one hour in which

visible emissions shall not exceed 30 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 71 of 7/25/2019 permit)

84. **Process Equipment Requirements - Limitations –** Fugitive visible emissions from the bag loading spout (E6.3) shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9VAC5-80-110, 40 CFR 60.672 and Table 3 of Subpart OOO and Condition 6 of 9/29/2016 permit)

85. **Process Equipment Requirements - Monitoring** - The fabric filter (Ref. E5cBH) shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating. The permittee shall establish a normal operating range for the differential pressure drop across the fabric filter, based on the manufacturer's recommendations or developed from observations recorded from the monitoring devices during normal operation. The permittee shall maintain written documentation of this range.
(9VAC5-80-110, Condition 2 of 9/29/2016 permit and Condition 25 of 7/25/2019 permit)

86. **Process Equipment Requirements – Monitoring -** To ensure good performance, the fabric filter monitoring device used to continuously measure differential pressure drop shall be observed by the permittee with a frequency of not less than once per week when the equipment listed in Conditions 72 and 73 are in operation. In the event that the differential pressure is operating outside of the normal operating range, the permittee shall take necessary corrective actions such that the fabric filter resumes proper operation. The permittee shall keep a log of observations from the fabric filter monitoring device. The log shall include the date and time of the observations, whether or not the differential pressure drop was operating with the normal operating range and any necessary corrective actions taken.
(9VAC5-80-110)

87. **Process Equipment Requirements - Monitoring -** At a minimum frequency of one time per calendar week and upon request of the DEQ, an observation of the presence of visible emissions from the primary and secondary crushing (Ref. E2, E3), tertiary crushing (Ref. E4.1, E4.2), screens (Ref. E2d, E3e), stockpiles, belt conveyors (Ref. E2a, E2b, E2c, E3a, E3b, E3c, E3d, E4a, E4b, E4c, and E4d,), bin (Ref. E4i), truck loadouts (Ref. E6, E6.1), saw dust belt conveyors (Ref. E5h.1, E5h.2), and East Ridge Flotation building shall be made. The presence of visible emissions shall require the permittee to:

    a. Take timely corrective action such that the emissions unit with visible emissions, resumes operation with no visible emissions, or,

b. For the truck load-out (Ref. E6, E6.1), tertiary crushing (Ref. E4.1, E4.2), screens (Ref. E2d, E3e), stockpiles, belt conveyors (Ref. E2a, E2b, E2c, E3a, E3b, E3c, E3d, E4a, E4b, E4c, and E4d), bin (Ref. E4i), conduct a visible emission evaluation (VEE) on the emissions unit with visible emissions, in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the subject emissions unit are 10 percent opacity or less. If any of the observations exceed the opacity limitation of 10 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emissions unit resumes operation within the 10 percent opacity limit: or

c. For the primary and secondary crushing (Ref. E2, E3, conduct a visible emission evaluation (VEE) on the emissions unit, with visible emissions, in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the subject emissions unit are 15 percent opacity or less. If any of the observations exceed the opacity limitation of 15 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emissions unit resumes operation within the 15 percent opacity limit; or

d. For the Flotation building and saw dust belt conveyors (Ref. E5h.1, E5h.2), conduct a visible emission evaluation (VEE) of the emissions unit with visible emissions, in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the subject emissions unit are 20 percent opacity or less. If any of the observations exceed the opacity limitation of 20 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emissions unit resumes operation within the 20 percent opacity limit.

If visible emissions observations conducted during twelve consecutive weeks show no visible emissions for a particular stack or emission unit, the permittee may reduce the monitoring frequency to once per month for that stack or emission unit. Anytime the monthly visible emissions observations show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per week for that stack. (9VAC5-80-110)

88. **Process Equipment Requirements - Monitoring -** The permittee shall maintain a visual observation log for the primary and secondary crushing (Ref. E2, E3), tertiary crushing (Ref. E4.1, E4.2), screens (Ref. E2d, E3e), stockpiles, belt conveyors (Ref. E2a, E2b, E2c, E3a, E3b, E3c, E3d, E4a, E4b, E4c, and E4d), bin (Ref. E4i), truck loadouts (Ref. E6, E6.1), saw dust belt conveyors (Ref. E5h.1, E5h.2), and East Ridge Flotation building, to demonstrate compliance. The logs shall include the date and time of the observations, whether or not there were visible emissions, the results of all VEEs, any necessary corrective action, and the name of the observer. If any of the following processing equipment: primary and secondary crushing (Ref. E2, E3), tertiary crushing (Ref. E4.1, E4.2), screens (Ref. E2d, E3e), stockpiles, belt conveyors (Ref. E2a, E2b, E2c, E3a, E3b, E3c, E3d, E4a, E4b, E4c, and E4d), bin (Ref. E4i), truck loadouts (Ref. E6, E6.1), saw dust

belt conveyors (Ref. E5h.1, E5h.2), and East Ridge Flotation building have not been operated for any period during the week it shall be noted in the log book that the unit was not operating, and an observation was not required.
(9VAC5-80-110)

89. **Process Equipment Requirements - Monitoring –** The permittee shall conduct quarterly 30-minute VEE's from the fabric filter (Ref. E5cBH), in accordance with 40 CFR 60.674(c) and 40 CFR 60, Appendix A-7, Method 22, when the baghouse is in operation. If any visible emissions are observed, the permittee must initiate corrective action within 24 hours to return the baghouse to normal operation. The permittee must record each Method 22 test, including the date and any corrective actions taken in a logbook (in written or electronic format).
(9VAC5-80-110, 40 CFR 60.674(c) and Condition 10 of 9/29/2016 permit)

90. **Process Equipment Requirements - Recordkeeping -**The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

    a. Annual throughput of raw ore through the East Ridge stone processing facility, in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    b. Annual throughput of the high grade kyanite processing equipment (high grade product air slide (Ref. E5h), 25-ton high grade product loadout bin and truck loadout system (Ref. E6.2) and high grade product bag loading spout (Ref. E6.3), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    c. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

    d. Results of all stack tests, visual emissions examinations and performance evaluations.

    e. The results of the quarterly Method 22 observations and any corrective actions taken in the logbook as required by Condition 89.

    f. Results of the weekly monitoring device observations, details of any corrective actions taken as a result and differential drop normal operating range records.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110, 40 CFR 64.9, 40 CFR 60.676(b)(1), Conditions 7a and b of 9/29/2016 permit and Conditions 87.a, v, and w of 7/25/2019 permit)

91. **Process Equipment Requirements – Testing -** Initial performance tests shall be conducted for PM from the fabric filter (Ref. E5cBH) in accordance with 40 CFR Part 60, Appendix A, Method 5 or 17 to determine compliance with the emission limits contained in Condition 78. The tests shall be performed, and reported within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Piedmont Regional Office within 180 days of start-up and shall conform to the test report format enclosed with this permit.
(9VAC5-80-110, 40 CFR 60.675 and Condition 8 of 9/29/2016 permit)

92. **Process Equipment Requirements – Reporting -** The permittee shall furnish written notification to the Piedmont Regional Office of the anticipated date of performance tests of the kyanite processing equipment postmarked at least 30 days prior to such date.
(9VAC5-80-110 and Condition 11c of 9/29/2016 permit)

Process Equipment Requirements - Raw and Finished Kyanite/Mullite Processing Equipment
(Ref. Gieseke Plant)

93. **Process Equipment Requirements - Limitations** - Particulate emissions from the bagging system (Ref. GAB1), repackaging system (Ref. GDHB1), micronizer system (Ref. GBMS1, GBMS2), floor sweepings bucket elevator (Ref. GRBE1) shall be controlled by totally enclosing the emission units with a building having four walls and a roof.
(9VAC5-80-110 and Condition 5 of 7/25/2019 permit)

94. **Process Equipment Requirements - Limitations -** Particulate emissions from the Upper Gieseke air classifier (Ref. G2a.2) and Upper Gieseke bagging machines (Ref. G3a.1-G3a.3), shall be controlled by a fabric filters (Ref. G2BH & G3BH). The fabric filters shall be provided with adequate access for inspection and shall be in operation when the air classifier and bagging machines are operating.
(9VAC5-80-110 and Condition 8 of 7/25/2019 permit)

95. **Process Equipment Requirements - Limitations -** Particulate emissions from each of the Lower Gieseke bagging machines (Ref. G8b.1-G8b.2) shall be controlled by fabric filters (Ref. G8B1 & G8B2). The fabric filters shall be provided with adequate access for inspection and shall be in operation when the bagging machines are operating.
(9VAC5-80-110 and Condition 7 of 7/25/2019 permit)

96. **Process Equipment Requirements - Limitations -** Particulate emissions from the Upper Gieseke ball mill (Ref. G2), Upper Gieseke storage bins (Ref. G1d, G2b), and 16" bucket elevator (Ref. G2a), and truck load-out (Ref. G3b) shall be controlled by totally enclosing the emission units with a building having four walls and a roof.
(9VAC5-80-110 and Condition 10 of 7/25/2019 permit)

97. **Process Equipment Requirements - Limitations -** Particulate emissions from the Lower Gieseke ball mill (Ref. G7), air classifier (Ref. G7c), storage bin (Ref. G8a), bucket elevators (Ref. G7a), storage tank (Ref. G6g.1), and truck load-out (Ref. G8c) shall be controlled by totally enclosing the emission units with a building having four walls and a roof.
(9VAC5-80-110 and Condition 11 of 7/25/2019 permit)

98. **Process Equipment Requirements - Limitations -** Particulate emissions from the Gieseke Allis Chalmers screen (Ref. G6b), pan coolers (Ref. G6a.1, G6a.2), and 7" bucket elevator (Ref. G6) shall be controlled by enclosure.
(9VAC5-80-110 and Condition 9 of 7/25/2019 permit)

99. **Process Equipment Requirements - Limitations -** Particulate emissions from the Lower Gieseke 24" belt conveyor (Ref. G6g), 16" bucket elevator (Ref. G6h), Upper Gieseke 36" belt conveyors (Ref. G1a, G1c) and storage bin (Ref. G1b) shall be controlled by enclosure.
(9VAC5-80-110 and Condition 12 of 7/25/2019 permit)

100. **Process Equipment Requirements - Limitations -** Particulate emissions from the Lower Gieseke 24" belt conveyors (Ref. G6e) and surge bin (G6f) shall be controlled by enclosure.
(9VAC5-80-110 and Condition 13 of 7/25/2019 permit)

101. **Process Equipment Requirements - Limitations -** Particulate emissions from the Gieseke bagging ball mill bin (Ref. GB1) shall be controlled by totally enclosing the emission unit with a building having four walls and a roof.
(9VAC5-80-110 and Condition 19 of 7/25/2019 permit)

102. **Process Equipment Requirements - Limitations -** Particulate emissions from the Gieseke bagging bucket elevator (Ref. GB3) shall be controlled by enclosure.
(9VAC5-80-110 and Condition 20 of 7/25/2019 permit)

103. **Process Equipment Requirements - Limitations -** Particulate emissions from the Gieseke Bagging Building bins (Ref. GB4, GB5, GB6, GB7) and truck load-out (Ref. GB8) shall be controlled by fabric filters (Ref GBDC1 thru GBDC4). The fabric filters shall be provided with adequate access for inspection and shall be in operation when the bagging equipment is operating.
(9VAC5-80-110 and Condition 21 of 7/25/2019 permit)

104. **Process Equipment Requirements - Limitations -** Particulate emissions from the Gieseke Bagging Building bins (Ref. GB9, GB11, GB13), bagging machines (Ref. GB10, GB12,

GB14) shall be controlled by venting the emission units to fabric filters exhausting into an total enclosure consisting of a building having four walls and a roof.
(9VAC5-80-110 and Condition 22 of 7/25/2019 permit)

105. **Process Equipment Requirements - Limitations -** Fugitive emission controls shall include the following, or equivalent, as a minimum:

a. Particulate matter emissions from kyanite and mullite processing equipment not covered by Conditions 1, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, and 104 shall be controlled by wet suppression or equivalent (as approved by the DEQ).

b. Application of asphalt, water, or suitable chemicals on dirt roads and materials stockpiles and other surfaces which may create airborne dust; paving roadways, and maintenance of roadways in a clean condition.

c. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Dirt, product, or raw material spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.

(9VAC5-80-110 and Condition 23 of 7/25/2019 permit)

106. **Process Equipment Requirements - Limitations -** The throughput of mullite and kyanite through the Lower Gieseke truck dump hoppers (Ref. G6c, G6d) shall not exceed 30,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 34 of 7/25/2019 permit)

107. **Process Equipment Requirements - Limitations -** The throughput of kyanite through the Gieseke bagging ball mill bin (Ref. GB1) shall not exceed 100,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 40 of 7/25/2019 permit)

108. **Process Equipment Requirements - Limitations -** The throughput of kyanite through the Gieseke bagging truck dump (Ref. GB2) shall not exceed 55,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 41 of 7/25/2019 permit)

109. **Process Equipment Requirements - Limitations -** Particulate emissions from the operation of the Gieseke kyanite/mullite processing facility, except kiln (Ref. G5) shall not exceed the limits specified below:

Particulate Matter	153.3 tons/yr
PM-10	59.8 tons/yr

Annual emissions are calculated as the sum of each consecutive twelve month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 106, 107, and 108
(9VAC5-80-110 and Condition 58 of 7/25/2019 permit)

110. **Process Equipment Requirements - Limitations -** Emissions from the operation of the Upper Gieseke fabric filter exhaust stacks (Ref. G2BH, G3BH, GBDC1, GBDC2, GBDC3, GBDC4), Lower Gieseke fabric filter exhaust stacks (Ref. G8B1, G8B2) shall not exceed the limits specified below:

Particulate Matter	0.05 g/dscm
PM-10	0.05 g/dscm

(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 64 of 7/25/2019 permit)

111. **Process Equipment Requirements - Limitations -** Visible emissions from the Upper Gieseke mill building (total enclosure), which contains the following kyanite processing equipment: ball mill (Ref. G2), storage bins (G1d, G2b), 16" bucket elevator (Ref. G2a), and truck load-out (Ref. G3b), shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 72 of 7/25/2019 permit)

112. **Process Equipment Requirements - Limitations -** Visible emissions from the Lower Gieseke mill building (total enclosure), which contains the following kyanite/mullite processing equipment: ball mill (Ref. G7), air classifier (Ref. G7c), storage bin (G8a), bucket elevators (Ref. G7a), storage tank (Ref. G6g.1), and truck load-out (Ref. G8c), shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 73 of 7/25/2019 permit)

113. **Process Equipment Requirements - Limitations -** Visible emissions from the following Gieseke mullite processing equipment (enclosure): pan coolers (Ref. G6a.1, G6a.2), Allis Chalmers screen (Ref. G6b), bucket elevator (Ref. G6), storage bin (G6f) and belt conveyor (Ref. G6e) shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 74 of 7/25/2019 permit)

114. **Process Equipment Requirements - Limitations -** Visible emissions from the Gieseke fugitive emission sources shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672(b) and Table 3 of Subpart OOO and Condition 75 of 7/25/2019 permit)

115. **Process Equipment Requirements - Limitations -** Visible emissions from the Gieseke kyanite mill and classifier fabric filter exhaust stack (Ref. G2BH), kyanite bagging machines fabric filter exhaust stack (Ref. G3BH), and mullite bagging machines fabric filter exhaust stacks (Ref. G8B1, G8B2) shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Conditions 76 of 7/25/2019 permit)

116. **Process Equipment Requirements - Limitations -** Visible emissions from the Gieseke bagging fabric filter exhaust stacks (Ref. GBDC1, GBDC2, GBDC3, GBDC4) shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Conditions 85 of 7/25/2019 permit)

117. **Process Equipment Requirements - Limitations -** Visible emissions from any building housing the Gieseke bagging system (Ref. GAB1), repackaging system (Ref. GDHB1), micronizer system (Ref. GBMS1, GBMS2), or floor sweepings bucket elevator (Ref. GRBE1) shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 86 of 7/25/2019 permit)

118. **Process Equipment Requirements - Monitoring** - Each fabric filter (Ref. G2BH, G3BH, G8B1, G8B2, GBDC1, GBDC2, GBDC3, GBDC4) shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating. The permittee shall establish a normal operating range for the differential pressure drop across the fabric filters, based on the manufacturer’s recommendations or developed from observations recorded from the monitoring devices during normal operation. The permittee shall maintain written documentation of this range.
(9VAC5-80-110 and Condition 25 of 7/25/2019 permit)

119. **Process Equipment Requirements – Monitoring -** To ensure good performance, the fabric filter monitoring devices used to continuously measure differential pressure drop shall be observed by the permittee with a frequency of not less than once per week when the equipment listed in Conditions 94, 95 and 103 are in operation. In the event that the differential pressure is operating outside of the normal operating range, the permittee shall

take necessary corrective actions such that the fabric filters resume proper operation. The permittee shall keep a log of observations from the fabric filter monitoring devices. The log shall include the date and time of the observations, whether or not the differential pressure drop was operating with the normal operating range and any necessary corrective actions taken.
(9VAC5-80-110)

120. **Process Equipment Requirements - Monitoring** - At least one time per calendar week an observation of the presence of visible emissions shall be made from the exhaust stack of the fabric filters (G3BH, GBDC1-GBDC4 and G8B1), Upper Gieseke Mill building, Lower Gieseke Mill building, storage bin (Ref. G1b), any building housing an emission unit listed in Condition 117, and any building housing the following emission units: Upper Gieseke 36" belt conveyors (Ref. G1a, G1c), 24" belt conveyor (Ref. G4a), pan coolers (Ref. G6a.1, G6a.2), and 7" bucket elevator (Ref. G6), Allis Chalmers screen (Ref. G6b), Lower Gieseke 24” belt conveyors (Ref. G6e, G6g, G6c.1, G6c.2), 16" bucket elevator (Ref. G6h), Lower Gieseke surge bin (G6f). The presence of visible emissions shall require the permittee to:

a. Take timely corrective action such that the emissions unit with visible emissions, resumes operation with no visible emissions, or,

b. Conduct a visible emission evaluation (VEE) on the Upper Gieseke Mill building, Lower Gieseke Mill building, any building housing an emission unit listed in Condition 117 and the exhaust stacks of the fabric filters (G3BH, GBDC1-GBDC4 and G8B1), in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the building and exhaust of the fabric filters with visible emissions are 7 percent opacity or less. If any of the observations exceed the opacity limitation of 7 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emission unit resumes operation within the 7 percent opacity limit, or

c. Conduct a VEE on the storage bin (Ref. G1b), Upper Gieseke 36" belt conveyors (Ref. G1a, G1c), 24" belt conveyor (Ref. G4a), pan coolers (Ref. G6a.1, G6a.2), and 7" bucket elevator (Ref. G6), Allis Chalmers screen (Ref. G6b), Lower Gieseke 24” belt conveyors (Ref. G6e, G6g, G6c.1, G6c.2), 16" bucket elevator (Ref. G6h), Lower Gieseke surge bin (G6f), in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the subject emissions unit are 10 percent opacity or less. If any of the observations exceed the opacity limitation of 10 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emission unit resumes operation within the 10 percent opacity limit.

d. If visible emissions observations conducted during twelve consecutive weeks show no visible emissions for a particular stack or emission unit, the permittee may reduce the monitoring frequency to once per month for that stack or emission unit. Anytime the monthly visible emissions observations show visible emissions, or when requested by

DEQ, the monitoring frequency shall be increased to once per week for that stack or emission unit.
(9VAC5-80-110)

121. **Process Equipment Requirements – Monitoring -** The permittee shall maintain a visual observation log for the emissions sources listed in Condition 120 to demonstrate compliance. The logs shall include the date and time of the observations, whether or not there were visible emissions, the results of all VEEs, any necessary corrective action, and the name of the observer. If any of the emissions sources listed in Condition 120 have not been operated for any period during the week it shall be noted in the log book that the unit was not operating, and an observation was not required.
(9VAC5-80-110)

122. **Process Equipment Requirements – CAM** - The permittee shall monitor, operate, calibrate and maintain the Upper Gieseke fabric filter (Ref. G2BH) controlling air classifier, bucket elevator, air classifier and storage bin (Ref. G2, G2a, G2a.2 and G2b, respectively) in accordance with the attached CAM plan and the CAM requirements in Conditions 163 through 172.
(9VAC5-80-110 E and 40CFR64.6(c))

123. **Process Equipment Requirements – CAM** - The permittee shall monitor, operate, calibrate and maintain the Lower Gieseke fabric filter (Ref. G8B2) controlling ball mill, air classifier, bucket elevator and bagging machine (Ref. G7, G7c, G7a and G8b.2, respectively) in accordance with the attached CAM plan and the CAM requirements in Conditions 163 through 172.
(9VAC5-80-110 E and 40CFR64.6(c))

124. **Process Equipment Requirements - Recordkeeping -** The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

a. Annual throughput of mullite through the Lower Gieseke truck dump (Ref. G6c), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

b. Annual throughput of kyanite through the Lower Gieseke truck dump (Ref. G6d), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Annual throughput of kyanite through the Gieseke Bagging building, in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total

for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

d. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

e. Results of all stack tests, visual emissions evaluations (VEE), and performance evaluations.

f. Copies of all notification of the actual start-up date of the Gieseke kyanite/mullite processing equipment.

g. Results of the weekly monitoring device observations, details of any corrective actions taken as a result and differential drop normal operating range records.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110 and Condition 87.e, f, n, v and w, of 7/25/2019 permit)

Raw and Finished Kyanite/Mullite Processing Equipment Requirements – Ref. Willis Mountain Plant

125. **Process Equipment Requirements - Limitations** - Particulate emissions from the Willis Mountain grinding mills (Ref. W3d.1, W3d.2), 24" belt conveyors (Ref. W3c.1, W3c.2, W4a.1), bucket elevators (Ref. W6a, W4a.2, W4a.3), 18" belt conveyor (Ref. W4f), storage bins (Ref. W4e.2-W4e.6, W5a.1, W5a.2, W6b, W6b.2), bagging machines (Ref. W5.1-W5.3, W7), magnetic separation (Ref. W4a), and truck load-outs (Ref. W5b.1, W5b.2, W7b, W7b.2) shall be controlled by totally enclosing the emission units with a building having four walls and a roof.
(9VAC5-80-110 and Condition 16 of 7/25/2019 permit)

126. **Process Equipment Requirements - Limitations -** Particulate emissions from the Willis Mountain storage bins (Ref. W4i, W4j, W4L, W5c) and bucket elevator (Ref. W4h) shall be controlled by fabric filter (Ref. DC1). The fabric filter shall be provided with adequate access for inspection and shall be in operation when the kyanite processing equipment is operating.
(9VAC5-80-850 and Condition 17 of 7/2/2019 permit)

127. **Process Equipment Requirements - Limitations -** Particulate emissions from the Willis Mountain bucket elevator (Ref. W8a), 18" belt conveyors (Ref. W3n, W4b, W4d), storage bins (Ref. W4c.1, W4c.2, W3f.1 thru W3f.5) and screen (Ref W4d.1), and sand screen (Ref. W6a.1) shall be controlled by enclosure.
(9VAC5-80-110 and Condition 18 of 7/25/2019 permit)

128. **Process Equipment Requirements - Limitations -** Fugitive emission controls shall include the following, or equivalent, as a minimum:

a. Particulate matter emissions from kyanite and mullite processing equipment not covered by Conditions 1, 125 and 127, shall be controlled by wet suppression or equivalent (as approved by the DEQ).

b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; paving roadways, and maintenance of roadways in a clean condition.

c. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Dirt, product, or raw material spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.

(9VAC5-80-110 and Condition 23 of 7/25/2019 permit)

129. **Process Equipment Requirements - Limitations -** The throughput of raw ore through the Willis Mountain stone processing facility shall not exceed 550,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. (9VAC5-80-110 and Condition 31 of 7/25/2019 permit)

130. **Process Equipment Requirements - Limitations -** The throughput of kyanite through the Willis Mountain truck load-outs (Ref. W4k, W4g1, W4g2) shall not exceed 55,000 tons per year for all load-outs combined, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 37 of 7/25/2019 permit)

131. **Process Equipment Requirements - Limitations -** The throughput of material through Willis Mountain Magnet building and Willis Mountain Bagging building shall not exceed 55,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-110 and Condition 38 of 7/25/2019 permit)

132. **Process Equipment Requirements - Limitations -** The throughput of kyanite through the Willis Mountain truck dump (Ref. W8) shall not exceed 30,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. (9VAC5-80-110 and Condition 39 of 7/25/2019 permit)

133. **Process Equipment Requirements - Limitations -** Particulate emissions from the operation of the Willis Mountain kyanite processing facility, except dryer/cooler (Ref. W41 & W42) and sand dryer (Ref. W6) shall not exceed the limits specified below:

Particulate Matter	18.4 tons/yr
PM-10	5.0 tons/yr

Annual emissions are calculated as the sum of each consecutive twelve month period.

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 129, 130, 131, and 132.
(9VAC5-80-110 and Condition 59 of 7/25/2019 permit)

134. **Process Equipment Requirements - Limitations -** Emissions from the operation of the Willis Mountain fabric filter exhaust stack (Ref. DC1) shall not exceed the limits specified below:

Particulate Matter	0.05 g/dscm
PM-10	0.05 g/dscm

(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 65 of 7/25/2019 permit)

135. **Process Equipment Requirements - Limitations -** Visible emissions from the Willis Mountain primary and secondary crushing (Ref. W2, W3) and belt conveyors (Ref. W2a, W3a, W3c.1, W3c.2, W3i, W4b, W3j, W3j.1, W3n), bucket elevators (Ref. W3h, W8a), storage bins (Ref. W3b, W3f.1 thru W3f.5, W4c.1, W4c.2), kyanite truck dump bin (Ref. W8), and reject truck load-out (Ref. W4c.2a) shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 77 of 7/25/2019 permit)

136. **Process Equipment Requirements - Limitations -** Visible emissions from the Willis Mountain Flotation building which includes grinding mills (Ref. W3d.1, W3d.2) and storage bin (Ref. W3d) shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 78 of 7/25/2019 permit)

137. **Process Equipment Requirements - Limitations -** Visible emissions from the Willis Mountain Magnet building which includes the following emission units: 24" belt conveyor (Ref. W4a.1), 24" bucket elevators (Ref. W4a.2, W4a.3), and magnetic separation (Ref. W4a) shall not exceed 20 percent opacity except during one six-minute period in any one

hour in which visible emissions shall not exceed 60 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 79 of 7/25/2019 permit)

138. **Process Equipment Requirements - Limitations -** Visible emissions from the Willis Mountain kyanite bagging building (enclosure), which includes the following emission units: belt conveyors (Ref. W4f), storage bins (Ref. W4e.2-W4e.6, W5a.1, W5a.2), kyanite bagging machines (Ref. W5.1-W5.3), and bulk kyanite load outs (Ref. W5b.1 & 2), shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110 and Condition 80 of 7/25/2019 permit)

139. **Process Equipment Requirements - Limitations -** Visible emissions from the Willis Mountain sand bagging building (enclosure) which includes the following emission units: bucket elevator (Ref. W6a) and storage bins (Ref. W6b, W6b.2), sand bagging (Ref. W7), and truck load outs (Ref. W7b, W7b.2) shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 81 of 7/25/2019 permit)

140. **Process Equipment Requirements - Limitations -** Visible emissions from the Willis Mountain kyanite bagging building fabric filter exhaust stack (Ref. DC1) shall not exceed 7 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-80-110, 40 CFR 60.672 and Table 2 of Subpart OOO and Condition 82 of 7/25/2019 permit)

141. **Process Equipment Requirements - Monitoring** - The fabric filter (Ref. DC1) shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating. The permittee shall establish a normal operating range for the differential pressure drop across the fabric filter, based on the manufacturer’s recommendations or developed from observations recorded from the monitoring device during normal operation. The permittee shall maintain written documentation of this range.
(9VAC5-80-110 and Condition 25 of 7/25/2019 permit)

142. **Process Equipment Requirements – Monitoring -** To ensure good performance, the fabric filter monitoring device used to continuously measure differential pressure drop shall be observed by the permittee with a frequency of not less than once per week when the equipment listed in Condition 126 is in operation. In the event that the differential pressure is operating outside of the normal operating range, the permittee shall take necessary corrective actions such that the fabric filters resume proper operation. The permittee shall keep a log of observations from the fabric filter monitoring device. The log shall include

the date and time of the observations, whether or not the differential pressure drop was operating with the normal operating range and any necessary corrective actions taken. (9VAC5-80-110)

143. **Process Equipment Requirements - Monitoring -** At least one time per calendar week an observation of the presence of visible emissions from the exhaust of the fabric filter (DC1), Willis Mountain primary and secondary crushing (Ref. W2, W3) and belt conveyors (Ref. W2a, W3a, W3c.1, W3c.2, W4b), bucket elevator (Ref. W8a), storage bin (Ref. W3b, W3f, W4c), kyanite truck dump bin (Ref. W8), truck loadouts (Ref. W4c.2, W4g1, W4g2, W4k), Flotation building, Magnet building, Kyanite bagging building, and Sand bagging building shall be made. The presence of visible emissions shall require the permittee to:

a. Take timely corrective action such that the emissions unit with visible emissions resumes operation with no visible emissions, or,

b. For the Willis Mountain primary and secondary crushing (Ref. W2, W3) and belt conveyors (Ref. W2a, W3a, W3c.1, W3c.2, W4b), bucket elevator (Ref. W8a), storage bin (Ref. W3b, W3f, W4c), kyanite truck dump bin (Ref. W8), truck loadouts (Ref. W4c.2, W4g1, W4g2, W4k), Flotation building, Magnet building, Kyanite bagging building, and Sand bagging building, conduct a visible emission evaluation (VEE) on the emissions unit with visible emissions, in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions the subject emissions unit are 20 percent opacity or less. If any of the observations exceed the opacity limitation of 20 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emissions unit resumes operation within the 20 percent opacity limit, or,

c. Conduct a VEE on the exhaust of the fabric filter (DC1), in accordance with EPA Method 9 (reference 40CFR60, Appendix A) for a minimum of six minutes, to assure visible emissions from the exhaust of the fabric filter are 7 percent opacity or less. If any of the observations exceed the opacity limitation of 7 percent, the observation period shall continue until a total of sixty minutes of observation have been completed. Timely corrective action shall be taken, if necessary, such that the subject emissions unit resumes operation within the 7 percent opacity limit, or,

d. If visible emissions observations conducted during twelve consecutive weeks show no visible emissions for a particular stack or emission unit, the permittee may reduce the monitoring frequency to once per month for that stack or emission unit. Anytime the monthly visible emissions observations show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per week for that stack. (9VAC5-80-110)

144. **Process Equipment Requirements - Monitoring -** The permittee shall maintain a visual observation log for the Willis Mountain primary and secondary crushing (Ref. W2, W3) and belt conveyors (Ref. W2a, W3a, W3c.1, W3c.2, W4b), bucket elevator (Ref. W8a), storage bin (Ref. W3b, W3f, W4c), kyanite truck dump bin (Ref. W8), truck loadouts (Ref.

W4c.2, W4g1, W4g2, W4k), Flotation building, Magnet building, Kyanite bagging building, and Sand bagging building to demonstrate compliance. The logs shall include the date and time of the observations, whether or not there were visible emissions, the results of all VEEs, any necessary corrective action, and the name of the observer. If any of the following processing equipment: Willis Mountain primary and secondary crushing (Ref. W2, W3) and belt conveyors (Ref. W2a, W3a, W3c.1, W3c.2, W4b), bucket elevator (Ref. W8a), storage bin (Ref. W3b, W3f, W4c), kyanite truck dump bin (Ref. W8), truck loadouts (Ref. W4c.2, W4g1, W4g2, W4k), Flotation building, Magnet building, Kyanite bagging building, and Sand bagging building have not been operated for any period during the week it shall be noted in the log book that the unit was not operating, and an observation was not required.
(9VAC5-80-110)

145. **Process Equipment Requirements – Recordkeeping -** The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

a. Annual throughput of raw ore through the Willis Mountain stone processing facility, in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

b. Annual throughput of dry kyanite from East Ridge through Willis Mountain truck dump (Ref. W8), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Annual throughput of kyanite through the Willis Mountain Kyanite Magnet and Kyanite Bagging buildings, in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

d. Annual throughput of kyanite through the Willis Mountain kyanite truck load-outs (Ref. W4g1, W4g2, W4k), in tons, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

e. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

f. Results of all stack tests, visual emissions evaluations (VEE) and performance evaluations.

g. Results of the weekly monitoring device observations, details of any corrective actions taken as a result and differential drop normal operating range records.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110 and Condition 87.h, i, l, m, v, and w of 7/25/2019 permit)

Gasoline Dispensing Processing Equipment Requirements - (Ref. GT2)

146. **Process Equipment Requirements - Limitations -** The gasoline dispensing facility (GDF), including the 19,760-gallon gasoline storage tank (Ref. GT2), shall be operated in accordance with 40CFR63.11111(b) and 40CFR63.11116 of Subpart CCCCCC-National Emission Standards for Hazardous Air Pollutants for Source Category for Gasoline Dispensing Facilities.
(40 CFR 63.11111(b), 40 CFR 63.11116 and 9VAC5-80-110)

147. **Process Equipment Requirements - Recordkeeping -** the permittee shall maintain records of gasoline throughput in accordance with 40CFR63.11116(b).
(40CFR63.11116(b) and 9VAC5-80-110)

Facility Wide Conditions

148. **Facility Wide Conditions -Limitations -** Total emissions from the kyanite processing facility shall not exceed the limits specified below:

Particulate Matter	226.7 tons/yr
PM-10	100.5 tons/yr
Sulfur Dioxide	175.9 tons/yr
Nitrogen Oxides (as NO2)	166.9 tons/yr
Carbon Monoxide	236.6 tons/yr
Volatile Organic Compounds	9.2 tons/yr
Hydrogen Fluoride	9.3 tons/yr

Annual emissions are calculated as the sum of each consecutive twelve month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 7, 20, 38, 50, 76, 133, 153 and 160.
(9VAC5-80-110 and Condition 56 of 7/25/2019 permit)

149. **Facility Wide Conditions -Limitations -** The coal, natural gas, LPG, distillate oil, residual oil, recycled oil, and wood shall meet the specifications below:

COAL: Maximum sulfur content per shipment: 2.3% as determined by ASTM D3177, D4239, or a DEQ-approved equivalent method

NATURAL GAS (NG) or LIQUEFIED NATURAL GAS (LNG): Minimum heat content: 1000 Btu/cf HHV as determined by ASTM D1826, D2382, D3588, or a DEQ-approved equivalent method.

LPG (Liquefied Petroleum Gas), including butane and propane, which meets ASTM specification D1835

DISTILLATE OIL which meets the ASTM D396 specification for numbers 1 or 2 fuel oil: Maximum sulfur content per shipment: 0.2%

RESIDUAL OIL which meets the ASTM D396 specifications for numbers 4, 5, or 6 fuel oil: Maximum sulfur content per shipment: 2.5%

RECYCLED OIL which meets the ASTM specifications for grade RFO5L fuel oil:

Maximum sulfur content per shipment (by weight):	0.5%
Maximum ash content (by weight):	0.8%
Maximum total halogen content (by weight):	1000 ppm
Maximum PCB content (by weight):	2 ppm
Maximum lead content (by weight):	100 ppm
Maximum arsenic content (by weight):	5 ppm
Maximum cadmium content (by weight):	2 ppm
Maximum chromium content (by weight):	10 ppm
Flash point (minimum):	140 ° F

Recycled oil does not include any used oil generated on-site.

WOOD/BARK excluding any wood which contains chemical treatments or has affixed thereto paint and/or finishing materials or paper or plastic laminates.

(9VAC5-80-110 and Condition 49 of 7/25/2019 permit)

150. **Facility Wide Conditions -Limitations -** The permittee shall obtain a certification from the fuel supplier with each shipment of coal. Each fuel supplier certification shall include the following:

a. The name of the fuel supplier;

b. The date on which the coal was received;

c. The volume of coal delivered in the shipment;

d. The sulfur content of the coal.

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 149. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
(9VAC5-80-110 and Condition 50 of 7/25/2019 permit)

151. **Facility Wide Conditions -Limitations -** The permittee shall obtain a certification from the fuel supplier with each shipment of residual oil. Each fuel supplier certification shall include the following:

a. The name of the fuel supplier;

b. The date on which the residual oil was received;

c. The volume of residual oil delivered in the shipment;

d. A statement that the residual oil complies with the American Society for Testing and Materials specifications for numbers 4, 5, or 6 fuel oil,

e. The sulfur content of the residual oil.

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 149. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
(9VAC5-80-110 and Condition 51 of 7/25/2019 permit)

152. **Facility Wide Conditions -Limitations -** The permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil. Each fuel supplier certification shall include the following:

a. The name of the fuel supplier;

b. The date on which the distillate oil was received;

c. The volume of distillate oil delivered in the shipment;

d. A statement that the distillate oil complies with the American Society for Testing and Materials specifications for numbers 1 or 2 fuel oil,

e. A statement from the supplier that the sulfur content of the distillate oil does not exceed 0.2% (by weight).

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the

fuel specifications stipulated in Condition 149. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
(9VAC5-80-110 and Condition 52 of 7/25/2019 permit)

153. **Facility Wide Conditions -Limitations -** The permittee shall obtain a certification from the fuel supplier with each shipment of recycled oil. Each fuel supplier certification shall include the following:

a. The name of the fuel supplier;

b. The date on which the recycled oil was received;

c. The volume of recycled oil delivered in the shipment;

d. The content of arsenic, cadmium, chromium, lead, PCBs, and total halogens in recycled oil in ppm, by weight;

e. A statement from the supplier that the sulfur content of the recycled oil does not exceed 0.5% (by weight).

f. The flash point of the recycled oil;

g. Documentation of the used oil analysis indicating the location of the used oil when the sample was drawn,

h. The test methods used to determine the contaminant level in the recycled oil.

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 149. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
(9VAC5-80-110 and Condition 53 of 7/25/2019 permit)

154. **Facility Wide Conditions -Limitations –** Except where this permit is more restrictive than the applicable requirement, the NSPS OOO equipment as described in the introduction/equipment list shall be operated in compliance with the requirements of 40 CFR 60, Subpart OOO.
(9VAC5-80-110, Condition 4 of 9/29/2016 permit and Condition 55 of 7/25/2019 permit)

155. **Facility Wide Conditions -Limitations -** The permittee shall develop and conduct a plan to analyze for total sulfur and total fluoride content of the feed into each of the following: East Ridge dryer (E5.1), Willis Mountain dryer (W4.1), and the Gieseke kiln (G5). The sampling program shall include DEQ approved procedures for sampling, compositing, and analyzing materials. Each unit’s feed (dryer or kiln) shall be analyzed for total sulfur and total fluoride content no less frequently than once per month. The collected sample shall be representative of the contents of each unit's daily raw material feed for the respective emission unit (E5.1, W4.1, G5). The sample may be obtained from the feed to the raw material silo. All results must be corrected to the moisture content of each unit’s output as

represented in the approved sampling plan. The daily samples for each dryer/cooler or kiln shall be designated with a reference identification number. Prior to commencement of operation of the Gieseke kiln (Ref. G5) the permittee shall submit the plan to the Piedmont Regional Office for approval. Revisions to the plan shall be submitted for approval prior to implementing such change.
(9VAC5-80-110 and Condition 29 of 7/25/2019 permit)

156. **Facility Wide Conditions -Limitations -** Hazardous air pollutant (HAP) emissions, as defined by §112(b) of the Clean Air Act, from the facility shall be less than 10 tons per year of any individual HAP and less than 25 tons per year of any combination of HAPs, calculated monthly as the sum of each consecutive 12-month period.
(9VAC5-80-110 and Condition 66 of 7/25/2019 permit)

157. **Facility Wide Conditions -Limitations -** At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance to air pollution control devices.

b. Maintain an inventory of spare parts.

c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9VAC5-80-110 and Condition 96 of 7/25/2019 permit)

158. **Facility Wide Conditions -Limitations -** Unless otherwise specified in this permit, for an existing emission unit at the facility, visible emissions shall not exceed 20 percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A).
(9VAC5-40-80 and 9VAC5-80-110)

159. **Facility Wide Conditions -Limitations -** Unless otherwise specified in this permit, for a new emission unit at the facility, visible emissions shall not exceed 20 percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by EPA Method 9 (reference 40CFR60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction. (9VAC5-50-80 and 9VAC5-80-110)

160. **Facility Wide Conditions – Recordkeeping -**The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

a. Monthly and annual emissions calculations for SO_2 from the East Ridge dryer/cooler (Ref. E5.1 & E5.2), Gieseke kiln (Ref. G5), Willis Mountain dryer/cooler (Ref. W4.1 & W4.2), and Willis Mountain sand dryer (Ref. W6) using the results of the samples collected per Condition 153, and calculation methods approved by the Piedmont Regional Office to verify compliance with the ton/yr emissions limitations in Condition 148. Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

b. Monthly and annual emissions calculations for CO from the East Ridge dryer/cooler (Ref. E5.1 & E5.2), Gieseke kiln (Ref. G5), Willis Mountain dryer/cooler (Ref. W4.1 & W4.2), and Willis Mountain sand dryer (Ref. W6) using the results of the samples per Condition 154 and calculation methods approved by the Piedmont Regional Office to verify compliance with the ton/yr emissions limitations in Condition 148. Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Monthly and annual hydrogen fluoride and other HAP emissions from the East Ridge dryer/cooler (Ref. E5.1 & E5.2), Gieseke kiln (Ref. G5), and Willis Mountain dryer/cooler (Ref. W4.1 & W4.2) (in tons) using the results of the samples collected per Condition 153, and other data sufficient to show compliance with Condition 156. The calculation method shall be approved by the Piedmont Regional Office. Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

d. Scheduled and unscheduled maintenance and operator training to all air pollution control devices.

e. All fuel supplier certifications.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-110 and Condition 87.r, s, t, v and q of 7/25/2019 permit)

161. **Facility Wide Conditions – Reporting -** When an existing affected facility is replaced by a piece of equipment of equal or smaller size, as designated in §60.670(d)(1), and there is no increase in the amount of emissions, the permittee shall submit the information required in §60.676(a) within thirty days of completion to the Piedmont Regional Office. This is not applicable for the replacement of all existing facilities in a production line with new facilities.
(9VAC5-80-110, 40 CFR 60.676(a), Condition 12 of 9/29/2016 permit and Condition 92 of 7/25/2019 permit)

162. **Facility Wide Conditions -Testing** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
(9VAC5-80-110 and Condition 91 of 7/25/2019 permit)

General Compliance Assurance Monitoring (CAM) Provisions

163. **CAM – Monitoring -** Each monitor shall be operated according to manufacturer's specifications, unless other methods are approved, and in compliance with 40CFR64.3(b) or (d). The approved CAM Plan shall include, at a minimum, the following information:
    a. Indicator;
    b. Measurement Approach;
    c. Indicator Range or Condition(s) for Range Development; and
    d. The following performance criteria:
        i. Data Representativeness;
        ii. Verification of Operational Status;
        iii. QA/QC Practices and Criteria;
        iv. Monitoring Frequency;
        v. Data Collection Procedures; and
        vi. Averaging Period

    Changes to the CAM Plan pertaining to the information in this condition may require a permit modification.
    (9VAC5-80-110 E and 40CFR64.6(c))

164. **CAM – Monitoring** - The permittee shall conduct the monitoring and fulfill the other obligations specified in 40CFR64.7 through 40CFR64.9.
(9VAC5-80-110 E and 40CFR64.6(c))

165. **CAM – Monitoring -** At all times, the permittee shall maintain the monitoring equipment, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
(9VAC5-80-110 E and 40CFR64.7(b))

166. **CAM – Monitoring -** Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the CAM-affected unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of compliance assurance monitoring, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by inadequate maintenance or improper operation are not malfunctions.
(9VAC5-80-110 E and 40CFR64.7(c))

167. **CAM – Monitoring -** Upon detecting an excursion or exceedance, the permittee shall restore operation of the CAM-affected unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup and shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator, designated condition, or below the applicable emission limitation or standard, as applicable.
(9VAC5-80-110 E and 40CFR64.7(d)(1))

168. **CAM – Monitoring -** Determination that acceptable procedures were used in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.
(9VAC5-80-110 and 40CFR64.7(d)(2))

169. **CAM – Monitoring -** If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the Piedmont Regional Office and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
(9VAC5-80-110 and 40CFR64.7(e))

170. **CAM – Monitoring -** If the number of exceedances or excursions exceeds 5 percent duration of the operating time for the CAM-affected unit for a semiannual reporting period, the permittee shall develop, implement and maintain a Quality Improvement Plan (QIP) in accordance with 40CFR64.8. If a QIP is required, the permittee shall have it available for inspection. The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the permitteee shall modify the plan to include procedures for conducting one or more of the following, as appropriate:

a. Improved preventative maintenance practices;

b. Process operation changes;

c. Appropriate improvements to control methods;

d. Other steps appropriate to correct control performance; and

e. More frequent or improved monitoring.

(9VAC5-80-110 and 40CFR64.8(a) and (b))

171. **CAM – Recordkeeping -** The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).
(9VAC5-80-110 F and 40CFR64.9(b))

172. **CAM – Reporting -** The permittee shall submit CAM reports as part of the Title V semi-annual monitoring reports required by General Condition 184 of this permit to the Piedmont Regional Office. Such reports shall include at a minimum:

a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

c. A description of the actions taken to implement a quality improvement plan (QIP) during the reporting period as specified in 40CFR64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

(9VAC5-80-110 F and 40CFR64.9(a))

Insignificant Emission Units

173. The following emission units at the facility are identified in the application as insignificant emission units under 9VAC5-80-720:

Emission Unit No.	Emission Unit Description	Citation 9VAC5-80-	Pollutant(s) Emitted (9VAC5-80-720 B)	Rated Capacity (9VAC5-80-720 C)
East Ridge Plant				
E4k	wet kyanite truck dump, 1978		PM/PM-10	150 tons/hr
E4e, E4e.1, E4e.2	30" belt conveyor, 1978		PM/PM-10	300 tons/hr
E4h,E4h.1, E4h.2, E4j, E7a	24" belt conveyors, 1978		PM/PM-10	<150 tons/hr, each
E4dWS1,E4dWS2	Wet screens, 1978		PM/PM-10	<300 tons/hr, each
E4g	12 - flotation cells and related wet processing equipment, 1978	720(B)(1)	PM/PM-10	NA
E4g.1	60” extractor belt		PM/PM-10	150 tons/hr
E4g.2	Sand screw		PM/PM-10	<150 tons/hr
ER4	20,000-gallon distillate/residual oil underground storage tank (UST)	720(B)(2)	VOC	NA
ER18	1 - 15,000-gallon tall oil storage tank above ground storage tank (AST)	720(B)(2)	VOC	NA
ER5	10,000-gallon distillate oil UST	720(B)(2)	VOC	NA
ER16	1 - 10,000-gallon distillate oil AST	720(B)(2)	VOC	NA
ER9, ER10, ER11	2,000-gallon or less motor/used oil ASTs	720(B)(2)	VOC	NA
ER12	1 - 1,000-gallon or less motor oil AST	720(B)(2)	VOC	NA
ER2, ER3, ER13	3 - 550-gallon distillate oil ASTs	720(C)(3)	VOC	< 1,000 gallons
ER6	2,000-gallon used oil UST	720(B)(2)	VOC	NA
ER1	1 - 550-gallon gasoline UST	720(B)(2)	VOC	NA
ER19, ER20	2-550-gallon petroleum derivative tanks	720(C)(3)	VOC	< 1,000 gallons
Gieseke Plant				
GT1	19,670 gallon distillate oil AST	720(B)(2)	VOC	NA
GT2	19,670 gallon gasoline AST	720(B)(2)	VOC	NA
GT4	92,000 gallon distillate/residual oil AST	720(B)(2)	VOC	NA
GT5	550-gallon kerosene AST	720(B)(2)	VOC	NA
GT3	10,000-gallon distillate oil AST	720(B)(2)	VOC	< 5 tons/yr
Willis Mountain Plant				
W3d.3. W3l.1,	24" belt conveyors, 1957		PM, PM-10	< 200 tons/hr,

Emission Unit No.	Emission Unit Description	Citation 9VAC5-80-	Pollutant(s) Emitted (9VAC5-80-720 B)	Rated Capacity (9VAC5-80-720 C)
W3g, W3l.2,				each
W3k	18" belt conveyor, 1957		PM, PM-10	< 100 tons/hr, each
W3e	18 - flotation cells and related wet processing equipment rated at 150 tons/hr	720(B)(1)	PM, PM-10	NA
W3e.1	Wet conveying, pump, screw		PM, PM-10	<150 tons/hr
WM6	20,000-gallon residual oil UST	720(B)(2)	VOC	NA
WM9	8,000-gallon tall oil UST	720(B)(2)	VOC	NA
WM5	7,800-gallon residual oil UST	720(B)(2)	VOC	NA
WM1	4,000-gallon distillate oil AST	720(B)(2)	VOC	NA
WM10	2,000-gallon lubricating oil AST	720(B)(2)	VOC	NA
WM11 and WM12	1,000-gallon lubricating oil AST, each	720(B)(2)	VOC	NA
WM13	275-gallon lubricating/used oil AST	720(C)(3)	VOC	<1,000 gallons
WM15	550-gallon lubricating oil	720(C)(3)	VOC	< 1,000 gallons
WM4, WM14, WM18	550-gallon lubricating/used oil ASTs	720(C)(3)	VOC	< 1,000 gallons
WM17	4,0000-gallon tall oil AST	720(B)(2)	VOC	NA
WM3	550-gallon distillate oil AST	720(B)(2)	VOC	NA
WM2	550-gallon gasoline UST	720(B)(2)	VOC	NA
E7	Winslow Binabatch concrete plant rated at 9 yd^3/hr	720(B)(1)	PM, PM-10	NA
None	Three portable diesel-powered light towers rated at 20HP each	720(C)(1)(a)	SO_2, NOx, CO	Nonroad engines

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9VAC5-80-110.

Permit Shield & Inapplicable Requirements

174. Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Inapplicability
NA		No inapplicable requirements were identified in the Title V permit application.

Nothing in this permit shield shall alter the provisions of §303 of the federal Clean Air Act, including the authority of the (i) administrator under that section, the liability of the owner

for any violation of applicable requirements prior to or at the time of permit issuance, or the ability to obtain information by the administrator pursuant to §114 of the federal Clean Air Act, (ii) the Board pursuant to §10.1-1314 or §10.1-1315 of the Virginia Air Pollution Control Law or (iii) the Department pursuant to §10.1-1307.3 of the Virginia Air Pollution Control Law.
(9 VAC 5-80-110 and 9VAC5-80-140)

General Conditions

175. **General Conditions - Federal Enforceability -** All terms and conditions in this permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.
(9VAC5-80-110)

176. **General Conditions - Permit Expiration -** This permit has a fixed term of five years. The expiration date shall be the date five years from the date of issuance. Unless the owner submits a timely and complete application for renewal to the Department consistent with the requirements of 9VAC5-80-80, the right of the facility to operate shall be terminated upon permit expiration.
(9VAC5-80-80, 9VAC5-80-110 and 9VAC5-80-170)

177. **General Conditions - Permit Expiration -** The owner shall submit an application for renewal at least six months but no earlier than eighteen months prior to the date of permit expiration.
(9VAC5-80-80, 9VAC5-80-110 and 9VAC5-80-170)

178. **General Conditions - Permit Expiration -** If an applicant submits a timely and complete application for an initial permit or renewal under 9VAC5-80-80 F, the failure of the source to have a permit or the operation of the source without a permit shall not be a violation of Article 1, Part II of 9VAC5 Chapter 80, until the Board takes final action on the application under 9VAC5-80-150.
(9VAC5-80-80, 9VAC5-80-110 and 9VAC5-80-170)

179. **General Conditions - Permit Expiration -** No source shall operate after the time that it is required to submit a timely and complete application under subsections C and D of 9VAC5-80-80 for a renewal permit, except in compliance with a permit issued under Article 1, Part II of 9VAC5 Chapter 80.
(9VAC5-80-80, 9VAC5-80-110 and 9VAC5-80-170)

180. **General Conditions - Permit Expiration -** If an applicant submits a timely and complete application under section 9VAC5-80-80 for a permit renewal but the Board fails to issue or deny the renewal permit before the end of the term of the previous permit, (i) the previous permit shall not expire until the renewal permit has been issued or denied and (ii) all the terms and conditions of the previous permit, including any permit shield granted pursuant to 9VAC5-80-140, shall remain in effect from the date the application is determined to be complete until the renewal permit is issued or denied.
(9VAC5-80-80, 9VAC5-80-110 and 9VAC5-80-170)

181. **General Conditions - Permit Expiration -** The protection under subsections F 1 and F 5 (ii) of section 9VAC5-80-80 F shall cease to apply if, subsequent to the completeness determination made pursuant section 9VAC5-80-80 D, the applicant fails to submit by the deadline specified in writing by the Board any additional information identified as being needed to process the application.
(9VAC5-80-80, 9VAC5-80-110 and 9VAC5-80-170)

182. **General Conditions - Recordkeeping and Reporting -** All records of monitoring information maintained to demonstrate compliance with the terms and conditions of this permit shall contain, where applicable, the following:

a. The date, place as defined in the permit, and time of sampling or measurements.

b. The date(s) analyses were performed.

c. The company or entity that performed the analyses.

d. The analytical techniques or methods used.

e. The results of such analyses.

f. The operating conditions existing at the time of sampling or measurement.
(9VAC5-80-110)

183. **General Conditions - Recordkeeping and Reporting -** Records of all monitoring data and support information shall be retained for at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
(9VAC5-80-110)

184. **General Conditions - Recordkeeping and Reporting -** The permittee shall submit the results of monitoring contained in any applicable requirement to DEQ no later than March 1 and September 1 of each calendar year. This report must be signed by a responsible official, consistent with 9VAC5-80-80 G, and shall include:

a. The time period included in the report. The time periods to be addressed are January 1 through June 30 and July 1 through December 31.

b. All deviations from permit requirements. For purposes of this permit, deviations include, but are not limited to:

i. Exceedance of emissions limitations or operational restrictions;

ii. Excursions from control device operating parameter requirements, as documented by continuous emission monitoring, periodic monitoring, or

compliance assurance monitoring (CAM) which indicates an exceedance of emission limitations or operational restrictions; or,

iii. Failure to meet monitoring, recordkeeping, or reporting requirements contained in this permit.

c. If there were no deviations from permit conditions during the time period, the permittee shall include a statement in the report that "no deviations from permit requirements occurred during this semi-annual reporting period."

(9VAC5-80-110)

185. **General Conditions - Annual Compliance Certification -** Exclusive of any reporting required to assure compliance with the terms and conditions of this permit or as part of a schedule of compliance contained in this permit, the permittee shall submit to DEQ and EPA no later than **March 1** each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards or work practices. The compliance certification shall comply with such additional requirements that may be specified pursuant to §114(a)(3) and §504(b) of the federal Clean Air Act. The permittee shall maintain a copy of the certification for five years after submittal of the certification. This certification shall be signed by a responsible official, consistent with 9VAC5-80-80 G, and shall include:

a. The time period included in the certification. The time period to be addressed is January 1 through December 31.

b. The identification of each term or condition of the permit that is the basis of the certification.

c. The compliance status.

d. Whether compliance was continuous or intermittent, and if not continuous, documentation of each incident of non-compliance.

e. Consistent with subsection 9VAC5-80-110 E, the method or methods used for determining the compliance status of the source at the time of certification and over the reporting period.

f. Such other facts as the permit may require to determine the compliance status of the source.

g. One copy of the annual compliance certification shall be submitted to EPA in electronic format only. The certification document should be sent to the following electronic mailing address:

R3_APD_Permits@epa.gov

(9VAC5-80-110)

186. **General Conditions - Permit Deviation Reporting** - The permittee shall notify the Piedmont Regional Office within four daytime business hours after discovery of any deviations from permit requirements which may cause excess emissions for more than one hour, including those attributable to upset conditions as may be defined in this permit. In addition, within 14 days of the discovery, the permittee shall provide a written statement explaining the problem, any corrective actions or preventative measures taken, and the estimated duration of the permit deviation. The occurrence should also be reported in the next semi-annual compliance monitoring report pursuant to General Condition 184.
(9VAC5-80-110 F.2 and 9VAC5-80-250)

187. **General Conditions - Failure/Malfunction Reporting -** In the event that any affected facility or related air pollution control equipment fails or malfunctions in such a manner that may cause excess emissions for more than one hour, the owner no later than four daytime business hours after the malfunction is discovered, notify the Piedmont Regional Office of such failure or malfunction and within 14 days provide a written statement giving all pertinent facts, including the estimated duration of the breakdown. Owners subject to the requirements of 9VAC5-40-50 C and 9VAC5-50-50 C are not required to provide the written statement prescribed in this paragraph for facilities subject to the monitoring requirements of 9VAC5-40-40 and 9VAC5-50-40. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the owner shall notify the Piedmont Regional Office.
(9VAC5-80-110 and 9VAC5-20-180)

188. **General Conditions - Severability** - The terms of this permit are severable. If any condition, requirement or portion of the permit is held invalid or inapplicable under any circumstance, such invalidity or inapplicability shall not affect or impair the remaining conditions, requirements, or portions of the permit.
(9VAC5-80-110)

189. **General Conditions - Duty to Comply -** The permittee shall comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Air Act or the Virginia Air Pollution Control Law or both and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or, for denial of a permit renewal application.
(9VAC5-80-110)

190. **General Conditions - Need to Halt or Reduce Activity not a Defense** - It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
(9VAC5-80-110)

191. **General Conditions - Permit Modification** - A physical change in, or change in the method of operation of, this stationary source may be subject to permitting under State Regulations 9VAC5-80-50, 9VAC5-80-1100, 9VAC5-80-1605, or 9VAC5-80-2000 and

may require a permit modification and/or revisions except as may be authorized in any approved alternative operating scenarios.
(9VAC5-80-110, 9VAC5-80-190 and 9VAC5-80-260)

192. **General Conditions - Property Rights** - The permit does not convey any property rights of any sort, or any exclusive privilege.
(9VAC5-80-110)

193. **General Conditions - Duty to Submit Information** - The permittee shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Board copies of records required to be kept by the permit and, for information claimed to be confidential, the permittee shall furnish such records to the Board along with a claim of confidentiality.
(9VAC5-80-110)

194. **General Conditions - Duty to Submit Information** Any document (including reports) required in a permit condition to be submitted to the Board shall contain a certification by a responsible official that meets the requirements of 9VAC5-80-80 G.
(9VAC5-80-110)

195. **General Conditions - Duty to Pay Permit Fees** - The owner of any source for which a permit under 9VAC5-80-50 through 9VAC5-80-300 was issued shall pay permit fees consistent with the requirements of 9VAC5-80-310 through 9VAC5-80-350. The actual emissions covered by the permit program fees for the preceding year shall be calculated by the owner and submitted to the Department by April 15 of each year. The calculations and final amount of emissions are subject to verification and final determination by the Department. The amount of the annual permit maintenance fee shall be the largest applicable base permit maintenance fee amount from Table 8-11A in 9VAC5-80-2340, adjusted annually by the change in the Consumer Price Index.
(9VAC5-80-110, 9VAC5-80-340 and 9VAC5-80-2340)

196. **General Conditions - Fugitive Dust Emission Standards** - During the operation of a stationary source or any other building, structure, facility, or installation, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but are not limited to, the following:

    a. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;

    b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; the paving of roadways and the maintaining of them in a clean condition;

c. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty material. Adequate containment methods shall be employed during sandblasting or other similar operations;

d. Open equipment for conveying or transporting material likely to create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion; and,

e. The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.

(9VAC5-40-90, 9VAC5-50-90 and9VAC5-80-110)

197. **General Conditions - Startup, Shutdown, and Malfunction** - At all times, including periods of startup, shutdown, soot blowing, and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Board, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
(9VAC5-50-20 E, 9VAC5-40-20 E and 9VAC5-80-110)

198. **General Conditions - Alternative Operating Scenarios -** Contemporaneously with making a change between reasonably anticipated operating scenarios identified in this permit, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating. The permit shield described in 9VAC5-80-140 shall extend to all terms and conditions under each such operating scenario. The terms and conditions of each such alternative scenario shall meet all applicable requirements including the requirements of 9VAC5 Chapter 80, Article 1.
(9VAC5-80-110)

199. **General Conditions - Inspection and Entry Requirements** - The permittee shall allow DEQ, upon presentation of credentials and other documents as may be required by law, to perform the following:

a. Enter upon the premises where the source is located or emissions-related activity is conducted, or where records must be kept under the terms and conditions of the permit.

b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of the permit.

c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit.

d. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(9VAC5-80-110)

200. **General Conditions - Reopening For Cause** - The permit shall be reopened by the Board if additional federal requirements become applicable to a major source with a remaining permit term of three years or more. Such reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 9VAC5-80-80 F. The conditions for reopening a permit are as follows:

a. The permit shall be reopened if the Board or the administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

b. The permit shall be reopened if the administrator or the Board determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

c. The permit shall not be reopened by the Board if additional applicable state requirements become applicable to a major source prior to the expiration date established under 9VAC5-80-110 D.

(9VAC5-80-110)

201. **General Conditions - Permit Availability** - Within five days after receipt of the issued permit, the permittee shall maintain the permit on the premises for which the permit has been issued and shall make the permit immediately available to DEQ upon request.
(9VAC5-80-110 and 9VAC5-80-150)

202. **General Conditions - Transfer of Permits** - No person shall transfer a permit from one location to another, unless authorized under 9VAC5-80-130, or from one piece of equipment to another.
(9VAC5-80-160)

203. **General Conditions - Transfer of Permits** - In the case of a transfer of ownership of a stationary source, the new owner shall comply with any current permit issued to the previous owner. The new owner shall notify the Board of the change in ownership within 30 days of the transfer and shall comply with the requirements of 9VAC5-80-200.
(9VAC5-80-110 and 9VAC5-80-160)

204. **General Conditions - Transfer of Permits** In the case of a name change of a stationary source, the owner shall comply with any current permit issued under the previous source name. The owner shall notify the Board of the change in source name within 30 days of the name change and shall comply with the requirements of 9VAC5-80-200.
(9VAC5-80-110 and 9VAC5-80-160)

205. **General Conditions - Permit Revocation or Termination for Cause** - A permit may be revoked or terminated prior to its expiration date if the owner knowingly makes material misstatements in the permit application or any amendments thereto or if the permittee violates, fails, neglects or refuses to comply with the terms or conditions of the permit, any applicable requirements, or the applicable provisions of 9VAC5 Chapter 80 Article 1. The Board may suspend, under such conditions and for such period of time as the Board may prescribe, any permit for any of the grounds for revocation or termination or for any other violations of these regulations.
(9VAC5-80-110, 9VAC5-80-190 C and 9VAC5-80-260)

206. **General Conditions - Duty to Supplement or Correct Application -** Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrections. An applicant shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application was filed but prior to release of a draft permit.
(9VAC5-80-110 and 9VAC5-80-80 E)

207. **General Conditions - Stratospheric Ozone Protection -** If the permittee handles or emits one or more Class I or II substances subject to a standard promulgated under or established by Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, the permittee shall comply with all applicable sections of 40 CFR Part 82, Subparts A to F.
(9VAC5-80-110 and 40 CFR Part 82)

208. **General Conditions - Asbestos Requirements -** The permittee shall comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (40 CFR 61) Subpart M, National Emission Standards for Asbestos as it applies to the following: Standards for Demolition and Renovation (40 CFR 61.145), Standards for Insulating Materials (40 CFR 61.148), and Standards for Waste Disposal (40 CFR 61.150).
(9VAC5-60-70 and 9VAC5-80-110)

209. **General Conditions - Accidental Release Prevention** - If the permittee has more, or will have more than a threshold quantity of a regulated substance in a process, as determined by 40CFR68.115, the permittee shall comply with the requirements of 40 CFR Part 68.
(9VAC5-80-110 and 40 CFR Part 68)

210. **General Conditions - Changes to Permits for Emissions Trading -** No permit revision shall be required under any federally approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.
(9VAC5-80-110)

211. **General Conditions - Emissions Trading -** Where the trading of emissions increases and decreases within the permitted facility is to occur within the context of this permit and to the extent that the regulations provide for trading such increases and decreases without a case-by-case approval of each emissions trade:

a. All terms and conditions required under 9VAC5-80-110, except subsection N, shall be included to determine compliance.

b. The permit shield described in 9VAC5-80-140 shall extend to all terms and conditions that allow such increases and decreases in emissions.

c. The owner shall meet all applicable requirements including the requirements of 9VAC5-80-50 through 9VAC5-80-300.

(9VAC5-80-110)

Attachment A: Compliance Assurance Monitoring Plan